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PRINCIPAL CONTENTS

Agricultural Progress in Open-field Oxfordshire
by M. A. HAVINDEN

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On Open Town-fields
by E. R. R. GREEN

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Holly as a Winter Feed
by JEFFREY RADLEY

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Agricultural Statistics in Scotland before 1866
by GEORGE HOUSTON

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CONTENTS

Agricultural Progress in Open-field Oxfordshire	*M. A. Havinden*	page 73
On Open Town-fields	*E. R. R. Green*	84
Holly as a Winter Feed	*Jeffrey Radley*	89
Agricultural Statistics in Scotland before 1866	*George Houston*	93
Some Terms used in Agrarian History: a Glossary	*R. A. Butlin*	98
Livestock Remains from Four Medieval Sites in Yorkshire	*M. L. Ryder*	105
Letter to the Editor		111
Work in Progress	*Joan Thirsk*	112
Reviews:		
A Matter of Time	*S. J. Hallam*	120
The Stoneleigh Leger Book, ed. R. H. Hilton	*M. W. Beresford*	122
Carte Nativorum, ed. C. N. L. Brooke and M. M. Postan	*Reginald Lennard*	123
The Making of the Broads, by J. M. Lambert and others	*Basil E. Cracknell*	125
Court Rolls of the Manor of Tottenham, ed. F. H. Fenton and W. McB. Marcham	*Joan Thirsk*	126
Historical Account of the Ancient Kings Mills, by G. H. Green	*Joan Thirsk*	127
The English Yeoman, by Mildred Campbell	*G. E. Mingay*	127
The English Farmhouse and Cottage, by M. W. Barley	*J. G. Hurst*	128
More Dorset Studies, by Maureen Weinstock	*Robert Douch*	130
A Survey of the Agriculture of Kent, by G. H. Garrad	*G. H. Kenyon*	130
A Survey of the Agriculture of Sussex, by R. H. B. Jesse	*G. H. Kenyon*	130
Principles for Agricultural Policy, ed. H. T. Williams	*Victor Bonham-Carter*	131
Mechanization in Agriculture, ed. J. L. Meij	*W. Harwood Long*	132
Economic Thought and the Irish Question, by R. D. Collison Black	*E. R. R. Green*	133
The Fabric of Farming, by A. N. Duckham	*R. Trow-Smith*	134
Marlborough and the Upper Kennet Country, by A. R. Stedman	*E. L. Jones*	135
A History of Wiltshire, Vol. IV, ed. Elizabeth Crittall	*H. P. R. Finberg*	135
God Speed the Plow, by Clark C. Spence	*J. W. Y. Higgs*	136
Periodicals Received		138
Notes and Comments		88
Notes on Contributors		83

Agricultural Progress in Open-field Oxfordshire

By M. A. HAVINDEN

IT is customary to regard open-field agriculture as backward and static, and consequently it is difficult to believe that any serious farming progress can have been made within the confines of such an unwieldy system. It is true that by modern standards progress was slow. But progress is a relative concept, and although the pace of development within open-field agriculture may seem snail-like to us, when it is seen in its historical context it is less unimpressive. Particularly is this so when it is realized that many of the most important advances in open-field farming were made before the idea of agricultural progress became fashionable in the mid-eighteenth century.

In recent years the crucial importance of the seventeenth century as the germinative period for agricultural improvement has become appreciated.[1] While the most distinctive changes took place in enclosed regions, like East Anglia, improvement was not confined to such regions. There was an advance along the whole agricultural front in the seventeenth century, on open-field as well as on enclosed farms. Indeed, it may well be, as H. L. Gray was the first to suggest, that this early progress on open-field farms was one of the chief reasons why enclosure was delayed for so long in Midland counties like Oxfordshire.[2] As late as 1809 Arthur Young was complaining that there were still nearly a hundred unenclosed townships in the county.[3]

In the seventeenth century Oxfordshire was, with the exception of a small area of Chiltern country in the extreme south, an almost entirely open-field county; but this does not mean that it was an isolated backwater of subsistence farming. On the contrary, the fertile lowland area between the Cotswolds and the Chilterns had long been supplying London with wheat and malt, which was shipped down the Thames on barges; while the whole of the

[1] See for instance J. H. Plumb, 'Sir Robert Walpole and Norfolk Husbandry', in *Econ. Hist. Rev.*, 2nd Ser., v, 1952, pp. 86–9; E. Kerridge, 'Turnip Husbandry in High Suffolk', *ibid.*, VIII, 1956, pp. 390–2; and A. H. John, 'The Course of Agricultural Change, 1660–1760', in *Studies in the Industrial Revolution*, ed. L. S. Presnell, pp. 125–55.

[2] See H. L. Gray, *English Field Systems*, pp. 122–37, where farming improvements in the open-field parts of Oxfordshire are discussed from the point of view of field redivision. Gray was a pioneer in the study of improved husbandry practices on the open fields.

[3] A. Young, *General View of the Agriculture of Oxfordshire*, 1809, p. 88.

upland region in the north of the county swarmed with livestock. Cattle were important as well as sheep, and the cheeses of Banbury were as prized in London as the celebrated Cotswold fleeces.[1] Oxfordshire farmers were thus in the fortunate position of serving an ever-expanding metropolitan market, and therefore had an incentive to improve their methods.

The progress which was made in open-field farming was twofold. Production was both diversified and increased, the two processes being intimately connected. The growing demand for meat and tallow, as well as for wool, broke down the predominantly arable character of the husbandry and made it more balanced. This, in turn, raised the fertility of the land so that the increase in livestock production was accompanied by an increase in the acreage of wheat and of fodder crops, and a decrease in the area of fallow land. Since the basis of the whole improvement was the diversification of production through the development of livestock husbandry, it is most convenient to consider this aspect first.

Opponents of the open-field system, like Arthur Young, naturally emphasized the rigid features in its use of land. An exaggerated picture was drawn of a system in which land was permanently divided between arable, meadow, and pasture, and within which no adaptability to changing market demands was possible. This picture has tended to obscure the variety of practice which was followed in different open-field regions, and to over-simplify the whole question of the relationship between improvement and enclosure. Detailed studies of open-field counties, such as that of Leicestershire by Dr Hoskins and that of Lincolnshire by Dr Thirsk, have shown that considerable flexibility and variation had already been introduced into open-field husbandry before the end of Elizabeth's reign.[2] The farmers did not all grow the same crop in the same field, and, more important, a measure of convertible husbandry had been introduced by the practice of sowing leys in the open fields. This useful device had become widespread in Oxfordshire by the early seventeenth century, as can be seen from the terriers of three unenclosed farms in north Oxfordshire, selected at random from the records of New College. At their farm at Hempton in 1624, 25 per cent of the land was described as leys; at Adderbury in 1628 the proportion was 16 per cent; and at Shutford in 1655, 34 per cent.[3]

[1] See Daniel Defoe, *A Tour thro' the whole Island of Great Britain*, ed. G. D. H. Cole, 1927, II, p. 430; A. Beasley, *History of Banbury*, 1841, p. 586.

[2] W. G. Hoskins, 'The Leicestershire Farmer in the Sixteenth Century', in *Essays in Leicestershire History*, 1950; and *The Midland Peasant*, 1957; Joan Thirsk, *English Peasant Farming*, 1957.

[3] New College, Oxford, book of MS. Terriers (pages unnumbered).

Because of the problem of common grazing rights on the stubbles and fallow fields, leys were usually sown by all the farmers as part of a general agreement. In this way nobody gave his neighbour unrequited free grazing, and the value of the stubble and fallow grazing was enhanced for all. A good example of such an agreement was that made in the parish of Middleton Stoney in north-east Oxfordshire, near Bicester, in 1638. Nicholas Harmon, the lord of the manor, and Edward Fitzherbert, "his farmer of the desmesne there," agreed with the parson and the tenants "to lay down for every yardland of the said farm and demesne, six acres of grass for every second year in North field, and that every one of the said tenants shall lay down for every yardland which they hold five acres for grass yearly in the Cornfield."[1] The yardlands at Middleton Stoney were of about forty acres each and lay in two open fields, which means that each tenant would have had an average of about twenty acres per yardland in the cornfield each year. By putting five acres down to leys each year in the cornfield, the tenants were converting about a quarter of their non-fallow arable land to temporary pasture. The length to which the leys were left down could be varied according to need. When crops were growing nearby livestock could be tethered on the leys, or penned in with hurdles.

It used to be argued that the existence of the right of fallow grazing on the open fields prevented the introduction of new and improved crops, particularly the clovers and turnips, since no one could be expected to grow these crops for the benefit of his neighbour's livestock. This argument is however no longer capable of general application, even though it may have been true in certain cases. In fact, a variety of new and improved legumes and grasses were introduced on the open fields in Oxfordshire in the seventeenth century. These included ryegrasses, clover, trefoil, and lucerne; but by far the most important was sainfoin, a deep-rooting legume which is particularly suitable for use on the thin, dry soils which occur in limestone country. It was therefore widely adopted in Oxfordshire, and especially in the northern, Cotswold part of the county. The growing of sainfoin represented an important advance, for it was both more productive and more nutritious than the indigenous grasses. Trow-Smith has said that "the increase in food value of a stand of lucerne or sainfoin, either pure or in association with some of the improved grasses, over a permanent pasture of indigenous species was one of roughly 100 per cent considered as hay."[2] Secondly, and perhaps even more important, the nitrogen-fixing mechanism in the root nodules of the legumes increased the fertility of the land on which they were grown.

[1] *The Victoria County History of Oxfordshire*, VI, 1959, p. 247.
[2] R. Trow-Smith, *A History of British Livestock Husbandry to 1700*, 1957, p. 257.

Sainfoin was introduced into Oxfordshire in the second half of the seventeenth century, and was being grown on the open fields as early as 1673, when it is referred to in a legal document belonging to St John's College, Oxford. This document was drawn up to legalize a private agreement to enclose some common pastures in East Chadlington, but it incidentally reveals the importance of sainfoin. It seems that the lord of the manor of East Chadlington, who was a London vintner named Sir William Rollinson, had sown certain of his strips in the open fields with sainfoin. His tenants agreed to give him right of way to move his sheep and cattle from his enclosed pastures to be tethered on these strips whenever he wished. He, in his turn, agreed to let the tenants' livestock graze his sainfoin from 1st August until the following 20th March, when it was to be fenced off with hurdles and allowed to grow for hay.[1]

It is probable that sainfoin was first grown by the more enterprising lords of manors on their demesne lands, but by about 1700 tenants were also growing it. This can be seen from agreements which were drawn up between tenants and their landlords, somewhat similar to the earlier agreements to grow leys. These agreements were made because it was more convenient if everybody agreed to grow sainfoin on all the strips on certain furlongs rather than on odd strips scattered about the fields. Thus certain furlongs were withdrawn from the arable rotation and sown with sainfoin. They were sometimes temporarily fenced off from the rest of the open field and referred to as enclosures in the agreements, but they lacked the most important feature of a genuine enclosure, the extinction of common grazing rights.

Such agreements were made in several townships of the large parish of Spelsbury, near Woodstock. In one of these townships, Taston, the twenty-two tenants signed an agreement on the 4th of January 1700 with the consent of the earl of Litchfield, who was lord of the manor, to "enclose" (in the sense mentioned above) one part of the open fields consisting of five furlongs, and to sow it with sainfoin. It is made clear in the articles of agreement, however, that there was to be no enclosing of individual strips within this area, but that each tenant, or owner, would agree to sow his own land with sainfoin. Common grazing rights on the sainfoin continued but their extent and duration were limited. Those with common rights were allowed to graze two cows for every yardland they held in Taston. The cows were not allowed in until the first crop of sainfoin hay had been removed. Sheep were not allowed in until October 13, when six sheep and ten lambs per yardland were permitted. On January 2 the sainfoin was closed to all grazing animals until the following summer. The problem of drinking-water for the stock was solved by a stipu-

[1] St John's College, Oxford, Muniments, VI, 56.

lation that all persons having rights of common on the sainfoin must contribute towards digging a pond. Finally, three fieldsmen were appointed to supervise the carrying out of the regulations and to collect fines for non-compliance. Any one ploughing up his sainfoin could be fined £10 per furrow ploughed.[1]

The details of this agreement indicate that it was intended to leave the sainfoin down for a considerable period, but a similar agreement made by seven yeomen with lands in the common fields of the nearby township of Fulwell in 1715 shows that these agreements were not permanent. In this case an agreement was made to sow sainfoin on a portion of the field which had been temporarily enclosed for that purpose before, but which had later reverted back into the ordinary common-field rotation. The tenants had found that their previous stand of sainfoin had been, in their own words, "advantageous," and they agreed to sow it again.[2]

Although sainfoin was the most commonly sown of the legumes it was not the only one. For instance, in 1728, when the manor of Chesterton was surveyed for the earl of Abingdon, the surveyor, Robert Whittlesey, noted that there was an acute shortage of meadow. He suggested that this should be relieved not by enclosure but by sowing a third of the arable land with legumes. He recommended clover for the wettest land, sainfoin for the stoniest, and trefoil for the driest.[3]

Turnips however do not seem to have been much grown in Oxfordshire at this period. "I introduced turnips into the field," says Jethro Tull, "in King William's reign; but the practice did not travel beyond the hedges of my estate till after the Peace of Utrecht."[4] In fact Tull left his Oxfordshire property of Howberry, just across the Thames from Wallingford, in 1709, when he moved to Prosperous in Berkshire; but he is probably more or less correct, since the earliest references to turnips which I have come across in examining thousands of probate inventories for Oxfordshire is in 1727, when John Deane, a cordwainer of Brize Norton, had 20 bushels of turnip seed worth 10s. a bushel.[5] Of course I have not examined every Oxfordshire inventory, and there were probably some farmers growing turnips earlier than this, but they were certainly not common before 1730, nor is there any evidence that they were grown on the open fields. However, this absence of turnip husbandry is not necessarily a sign of backwardness, for, as Trow-

[1] Oxfordshire Record Office, Dillon MSS., DIL/II/n/1. [2] *Ibid.*, DIL/II/t/2.

[3] Bodleian Library, MSS. Top. Oxon. c. 381,102.

[4] Quoted by Lord Ernle, *English Farming Past and Present*, ed. Sir A. D. Hall, 5th ed., 1936, p. 135.

[5] *Ibid.*, p. 170; Bodl. MS. Wills Oxon., 164/3/13.

Smith has recently pointed out, the turnip has been historically somewhat over-valued. Its nutritive value, weight for weight, is less than that of barley straw, and it has never been such an important source of fodder for livestock as clover, sainfoin, or improved grasses like ryegrass.[1]

The introduction of new crops is only one aspect of agricultural progress, but it is an important one because it sometimes stimulates and makes possible the reorganization of an old system along more advanced lines. This was certainly the case with the introduction of sainfoin in Oxfordshire. For instance, when the farmers of Spelsbury made an agreement to grow sainfoin in 1708, similar to the ones already cited for Taston and Fulwell, they took the opportunity to reorganize their arable rotation by a redivision of the open fields.[2] It was decided that the land left over after some had been set aside for sainfoin should be divided into three new fields, two to bear corn crops and one to lie fallow each year. Spelsbury lies in the northern upland part of Oxfordshire which was, according to Gray, traditionally a two-field region; thus the two original fields were redivided into four new ones, one of which was always under sainfoin. This redivision of two-field systems into four or more fields was common all over Oxfordshire in the seventeenth century, and Gray has cited several examples of it.[3] The terrier of the New College farm at Adderbury, previously referred to, shows that there were five fields there as early as 1628.

The primary object of field redivision was to reduce the area of fallow land. Clearly fallow grazing was one of the least efficient ways of feeding livestock, although it served a useful purpose in manuring and consolidating the arable land and also in keeping it free from weeds. It could therefore not be abandoned altogether; but as the fallow land could produce more food for the livestock if it were sown with fodder crops such as peas, beans, or vetches, than it could by growing weeds, the object was to reduce the fallow area to the smallest possible amount. These reductions were possible because the fodder crops which replaced the fallow were legumes, and therefore did not exhaust the land.

The practice of growing fodder crops on the fallow field was called 'hitching'. It was probably first practised in a small way. Perhaps one or two furlongs would be temporarily fenced off from the fallow field and sown with pulses. For instance, in 1612 Robert Loder, who farmed in the two-field parish of Harwell on the edge of the Berkshire Downs, not far from Oxfordshire, had "17 landes hitched with poulse and fatches" (i.e. vetches).[4] The

[1] Trow-Smith, *op. cit.*, p. 256. [2] Oxford Rec. Off., DIL/II/n/2b.
[3] Gray, *op. cit.*, pp. 493–4.
[4] *Robert Loder's Farm Accounts, 1610–20*, ed. G. E. Fussell, Camden 3rd Ser., LIII, 1936, p. 39.

practice spread throughout the seventeenth century, and such small, temporary hitches were gradually replaced by large, permanent fields as the old open fields were divided.

By the early eighteenth century field division had become complex, particularly in the north of the county. An example of this is provided by the parish of Shenington, which was surveyed for Oriel College in 1732. At the end of the survey there is a section headed "Customs of the Parish" which reads as follows: "Shenington Field is called Townside Land, Farmside Land, and Cotmanside Land. The Townside is divided into four Parts, and three of them are ploughed and sow'd every year, with wheat, Pease and Barley; the fourth part lies fallow; or when it is Sow'd with Pease, it is called Hitch. Part of Townside is every other Years Ground.

"Farmside is ploughed as the Townside.

"The Cotmanside being divided into four parts, one is sow'd with wheat, and one with Barley every year; sometimes the other two parts lie fallow, and sometimes both are hitch, or as the parish agree."[1]

The open arable land was thus divided into twelve parts in which the tenants' lands lay in intermixed strips. In fact not all these strips were used as arable, since the survey makes it clear that some of them were leys; but excluding the leys, the apportionment of the crops was roughly as follows: a quarter of the land (three of the twelve parts) normally grew wheat, and another normally grew barley, while a sixth (two of the twelve) normally grew peas. The remaining third of the land (four of the twelve parts) was either fallow or hitched with peas, or divided between the two, "as the parish agree."

The noteworthy point is the flexibility of this system. The area of pulses could be varied from a sixth to a half of the arable land, and the fallow could be eliminated entirely in seasons when it was felt to be unnecessary. The same degree of flexibility was perhaps not to be found everywhere, but the example of Shenington shows the extent to which the more advanced open-field farmers could vary and improve their system without enclosure.

It is now time to consider what effect the growing diversity of the open-field system had in raising production. We have examined various ways by which the quantity of livestock fodder was increased, and its quality improved; and as we should have expected, these developments were reflected in a growth in the size of flocks and herds during the seventeenth century. This growth can be roughly measured by analysing random samples of farmers' inventories.

Thus, in a sample of 226 inventories relating to the limestone upland region of Oxfordshire, taken between 1580 and 1640, the size of the median

[1] Oriel College, Oxford, Muniments, S II.I.19, p. xxxii.

average sheep flock was 14; whereas in a sample of about the same size for the years 1660–1730 the median average flock was 60, or more than four times as large. It is true that the proportion of farmers who kept sheep fell slightly between these two periods (from 66 per cent to 56 per cent), but even so it seems clear that the sheep population had considerably increased. Of course, some of the increase must be ascribed to the effects of enclosure, and particularly piecemeal enclosure within open-field parishes; but as nearly two-thirds of this region was still unenclosed in 1730 it seems reasonable to assume that most of the increase occurred in open-field parishes.

In the Thames valley region, between the limestone uplands and the Chilterns, where there is a wide variety of clay and loam soils, and where conditions are less favourable for sheep, the increase was naturally less pronounced. But even here a comparison of the size of the median average flock, taken from two samples containing over 400 inventories each, shows that it more than doubled over the same period, rising from 24 to 51 sheep.

The increase in the numbers of cattle was not of a similar magnitude, but they seem to have made a modest advance. Herds were not generally large; the average size was under five, but there was an increase in the proportion of herds containing more than five cattle during the course of the seventeenth century, and this increase was not accompanied by any decline in the proportion of farmers keeping cattle, which remained over 80 per cent during the whole period. In the samples relating to the limestone uplands herds containing over five cattle rose from 33 per cent in the period 1580–1640 to 46 per cent between 1660 and 1730, and the corresponding figures for the lowlands were similar (39 per cent to 45 per cent). However, herds containing more than 20 cattle did not amount to more than 5 per cent of the herds in either region in 1730, so that the increase in dairy products and beef took the form of a slow but steady advance over a wide area, rather than that of a dramatic increase in specialized production.

From the evidence of the inventories, then, it seems clear that open-field townships were able to improve their livestock husbandry.

A swing to livestock also reacts upon arable husbandry. It is probable that the acreage of corn crops was reduced, but on the other hand the remaining arable land was given the advantage of better rotations and more manure. This meant that there was an opportunity for the reduction in the arable acreage to be offset by an increase in quality of the corn grown and also possibly in the yield per acre; although detailed evidence for the latter is not available. The evidence of the inventories, however, strongly suggests that the acreage of the inferior bread cereals, like rye, barley, and oats, was reduced while that of wheat was increased. This development was subject to

regional variation. The upland areas, which had hitherto been behind the more fertile vale in this respect, showed the greatest rate of advance. The evidence for this comes from a comparison of the crops grown by groups of farmers in the same periods which were used in the comparison of the livestock numbers. For this purpose it is only possible to use inventories which were made in the summer before harvest, and which therefore show the complete acreage of the different crops. Such inventories are not numerous, and the samples used are not as large as I should have liked, but I have used all the surviving Oxfordshire inventories which were available.

On the limestone uplands the crops grown by a group of 23 farmers in the period 1660–1730 showed the following changes when compared with those of a group of 26 farmers in the period 1590–1640. The proportion of wheat had almost doubled, from about 14 per cent to 27 per cent; the pulses had risen from 15 to 20 per cent, the barley had fallen from 61 to 49 per cent, the oats from 7 to 4 per cent, and the rye, which had only been 4 per cent before 1640, had disappeared altogether. Practically every one of the farmers used in these samples lived in open-field parishes, and although a few of them may have had some enclosed land, there seems no reason to doubt that most of the improvement took place on the open fields. It has to be remembered that this was naturally sheep and barley country, and that the thin 'stone-brash' soil was not well suited to wheat. In the circumstances a doubling of the proportion of land devoted to wheat was an important achievement.

In the more fertile clay vale the advance of wheat was less pronounced (from 25 per cent to 32 per cent) in two similar samples, but it will be noticed that farmers in the vale were already growing twice as much wheat as upland farmers in the early seventeenth century.

Rye, like wheat, was also subject to considerable regional variation. It seems to have lingered longest in the small upland region around Banbury, where a thickly settled peasantry cultivated a useful red soil derived from a localized outcrop of the marlstone, or ironstone, of the middle lias. The farmers' inventories for this region show that before about 1630 the winter-sown cereal was almost invariably rye or maslin (which is a mixture of rye and wheat), and that wheat was seldom sown as a separate crop; but that after about 1630 the position was almost reversed, most of the farmers preferring wheat to rye or maslin. This was true of large as well as small farmers. For instance, William Alcocke, of Epwell, was a substantial farmer who died in 1612 leaving a personal estate of £127 14s. 10d. His crops were worth £44, of which rye and barley accounted for £36, and hay, peas, and oats for £8; but he had no wheat.[1] Neither had Robert Calcot of Burdrop, who died in

[1] Bodl. MS. Wills Oxon. 1/3/5.

March 1610 leaving crops worth £50 2s. 8d. Rye was his only winter-sown cereal.[1] This is in marked contrast to the situation twenty years later, when farmers like John Lovell, a yeoman of Bloxham, were more typical. His only winter-sown crop in 1633 was wheat, of which he had 28 acres growing in November.[2]

The way in which the supply of pulse crops was increased by the new rotations has already been indicated from the survey of Shenington, as well as from the comparison of probate inventories. The type of pulses grown depended to some extent on the soil. In the upland regions beans and vetches were rare, and peas almost universal; but in the Thames valley farmers sometimes grew quite a variety of pulses. For instance, Thomas Reading, a husbandman of Shirburn, a parish at the foot of the Chilterns, whose inventory was made on the 1st of August 1700, had 12 acres of beans and peas, apparently growing together, 9 acres of peas on their own, 2 acres of vetches, and 2 acres of dills, or lentils. In all he had 25 acres of pulses, which was just over a third of his 73 sown acres.[3]

The increase in the production of wheat and pulses took place largely at the expense of barley. This was one of the improvements which agricultural writers like John Worlidge were calling for early in Charles II's reign, when they complained that an excessive acreage was devoted to barley on many open-field farms.[4]

Although there is no reliable evidence that this improvement in the type of cereals being grown on open-field farms was accompanied by an increase in the yield per acre, an interesting development in farm equipment took place at this time, which suggests that harvests may have become heavier; namely, the introduction of the commodious four-wheeled farm wagon in place of the old two-wheeled long-cart. The way in which the use of the wagon was spreading can be seen from the inventories. Dr Robert Plot, writing in 1677, praised the farm wagon, but said that it was little used at this time in Oxfordshire, except by carriers.[5] His estimate is borne out by the farmers' inventories, but they show that he was soon to be out of date; for while there are no examples of wagons in a sample of nearly 800 inventories taken between 1580 and 1640 and only three in a sample of 138 in the 1660's, by the 1690's about 20 per cent of the farmers possessed wagons, and by the 1720's the proportion had risen to 34 per cent. There was hardly a yeoman in George I's reign who did not possess at least one wagon, in contrast to the

[1] Bodl. MS. Wills Oxon. 11/3/36. [2] *Ibid.*, 139/2/7. [3] *Ibid.*, 147/2/1.

[4] John Worlidge, *Systema Agriculturae*, 4th ed., 1687, p. 36. The first ed. was published in 1669.

[5] R. Plot, *The Natural History of Oxfordshire*, 1677, p. 257.

situation at the Restoration when even the wealthiest yeomen were without them. Although all the reasons for the introduction of wagons at this period are not known, the possibility of higher yields cannot be ruled out.

It is not possible in a short paper to go any further into the details of the many improvements which occurred in open-field agriculture. I have tried to concentrate upon the main features. These were, of course, abetted by minor changes, such as the exchange and consolidation of strips, which all helped to make the system less inconvenient.

In conclusion, the evidence, when taken altogether, suggests that there was an ascending spiral of progress. It began with an increase in the area of grassland by means of leys. This led to more livestock and more manure. Then the demand for better winter food for the livestock led to the introduction of the legumes like sainfoin and clover. These, in conjunction with the increased supply of manure, helped to raise the fertility of the land, and enabled it to be more intensely cultivated by the partial elimination of fallows. As a result of more intensive cultivation, the supply of fodder for the livestock was further augmented (in the form of pulses), while the supply of grain was not only maintained, but actually improved in quality by means of the enlarged wheat acreage. Thus each advance, while small in itself, stimulated further advance in another sector, and the spiral was able to begin again at a higher level.

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On Open Town-fields

By E. R. R. GREEN

CHARLES VARLEY or Varlo, the author of the following account of the open fields, was born in Yorkshire about 1725 and began life as a farm labourer in England and Scotland. About 1748 he went to Ireland, where he was able to put his farming experience to good account, first as steward to the bishop of Elphin and then as an instructor in flax-growing for the Linen Board. Varley also engaged in the linen and cattle trade and became a fairly prosperous merchant and grazier. He finally left Ireland in 1767, the year after the publication of his first book, and apparently supported himself for the rest of his life by his writing and as a farming expert. In 1784 he went off to America to lay claim to the governorship of New Jersey and vast tracts of the state on the strength of an old charter which he had acquired, an enterprise which proved "a rock for him to split upon." On his return to England, he settled in London where he was still living as late as 1795.[1]

Varley was the author of eight books on agriculture, but his writings were not so extensive as this might seem to indicate, for the material was more or less duplicated in each succeeding volume.[2] Most of his work is characterized by the straightforward description of farming practice and eccentricity of opinion apparent in his account of the open-field system. Varley deserves to be better known if only for his practical approach to farming, while his autobiography is well worth reprinting.[3]

Although there is little need for comment on the following extract, some explanation should perhaps be offered for Varley's championship of the open

[1] The only available account of Varley's life is in the *D.N.B.*, xx, pp. 153–4. Mr Desmond Clarke, Librarian of the Royal Dublin Society, has recently identified Varley as the 'Real Farmer' whose autobiography prefaces *The Modern Farmer's Guide* (1768). I am most grateful to Mr Clarke for his kindness in permitting me to read his MS. on Varley.

[2] *A Treatise on Agriculture, entitled the Yorkshire Farmer*, 1766; *The Modern Farmer's Guide*, 1768; *A New System of Husbandry* (four English and one American editions, 1770–85); *Schemes offered for the Perusal of the Legislature, Freeholders, and Public in General*, 1775; *Essence of Agriculture*, 1786; *Nature display'd*, 1793; *The Floating Ideas of Nature*, 1796; *Guide to Reason*, 1798. The British Museum lacks his first two books and also the *Essence of Agriculture* and the *Guide to Reason*.

[3] Mr G. E. Fussell has written enthusiastically of the 'Real Farmer', comparing his narrative to the contemporary picaresque novel, but not realizing that Varley was the author. See G. E. Fussell, 'A "Real Farmer" of eighteenth-century England and his book, the *Modern Farmer's Guide*', *Agricultural History*, xvii, pp. 211–15, and *More Old English Farming Books*, London, 1950, pp. 80–3.

fields. His attitude towards enclosure was by this time a somewhat old-fashioned one, for he thought of it as primarily intended to turn land into pasture rather than as a means to improved farming. This hostility towards extension of grazing at the expense of tillage was drawn from his experience of Ireland, and he feared that a similar development might take place in England. This was why he constantly advocated a general enclosure act to bring waste land under the plough and a statutory limit to the size of farms to check consolidation.

On the good effect and explanation on open Town-fields, as in England[1]

A Town-field consists of several hundred acres, without hedges, ditches, or other fences, to divide one man's land from another, tho' a hundred farmers may have land in said field, yet none will have perhaps above one or two ridges lying together in one place, but alternately mixed or interspersed thro' the field, insomuch, that a farmer has no way to know his own ridges; but by cutting the first letter of his name or some figure, in a bit of grass at the end of his ridge, and in order that one shall not incroach or steal from another with the plough, they measure the breadth, as every man's ridge is of the same size, whether they be rood, half acre, or acre ridges, they being generally laid down with some proportion of measurement; the reason they are thus laid out in small parcels, and intermingled, was that each person should have his chance of good or bad land, as it might vary in one of those large fields.[2]

Most towns have five of these fields, of which one will be fallow, another wheat, another barley, another beans, or peas, and another oats. Every year the farmers takes care, never to sow one sort of grain twice together on the same field, but keeps alternately changing, so that one is a preparative for another, and each field gets its regular fallow, every five years, and thus they are kept in tillage, from generation to generation.

Each farmer is obliged to concur with his neighbour, in this regular course of tillage, particularly in the fallow and winter crop, as the fallow field is common for the cattle, all the fallow year;[3] likewise the wheat field is fenced in at Michaelmas: wheras the fields that is to be sown with spring corn, may be kept open till April.

[1] The extract is chapter xxxi of *The Yorkshire Farmer*, 2 vols., Dublin, 1766, I, pp. 198–206. It appears in substance in all Varley's subsequent books which I have seen.

[2] *A New System of Husbandry*, 3 vols., York, 1770, I, p. 285, adds: "therefore an equality was very necessary in dividing the lands of England when it was first peopled, and happy it has been for her inhabitants that it has continued so long."

[3] *Ibid.*, I, p. 286 adds: "on which a great number of sheep are kept, that, I may say, weed the fallows, for they pick up scutch grass and other wild roots every time it is ploughed."

A farmer may substitute in the place of any crop, one of his own chusing, provided it stand on the ground no longer than his neighbours, as they keep a regular time of laying their fields common to the cattle, and fencing them in.

There are some towns, that may have only three or four of these fields; if this be the case, they fallow the oftener, and is confined to fewer sorts of crops: but of late years, they have found a good method of sowing turnips in the fallow year; in this case they begin to plow the stubble under, as soon as harvest is in, and keeps ploughing for a winter fallow, till midsummer following; then sow turnips, and eats them off by April; then sows barley, after barley beans or peas, after these, wheat, after wheat oats, and again begin with turnips: thus they get a valuable crop, and fallow the same year.[1]

My Irish, and indeed some of my English readers, may think it a sort of a hardship for these farmers to have three small parcels of land, thus intermixed, and not at liberty (altogether) to occupy them as they please: nay, in short some of the farmers who hold said field lands, is so much dissatisfied with their lot, that they have applied, and obtained acts of parliament, to enclose their said fields.

However, I see this quite in another light, and should consider it, rather as a misfortune, were all the town-fields in England inclosed; for if we consider tillage in its most truly deserved light, we shall find in the countries where it most flourishes, to be the most rich, happy, and independant.

In short, a corn country gives bread for people of all denominations around it, and work and bread enough for all the poor within it; it is from these open field countries in England where most of the corn is raised, that supplies London and other great and foreign markets; but were those fields inclosed, instead of corn, the land would be engrossed by rich farmers, and turned into grass; then consequently corn would be scarce and dear, and the poor would want both bread and work. I know this to be already the consequence where some fields has been inclosed of late years.

If the said lands be kept for tillage, it is plain they are in a better state than if inclosed in small fields, as corn never grows better than in an open exposure, not to speak of the loss of ground taken up in the ditches, &c. But while the land is kept in the open town-fields, the farmers are obliged to keep them in a regular course or succession of tillage. Again let me remark, that I believe these open or town-fields to be a great spur to improvement in husbandry.

How often have I heard farmers make their remarks in passing the ends of

[1] *A New System of Husbandry*, I, p. 292, adds: "This is a great improvement in husbandry, to such towns as have adopted it; but I find this is far from being so general as it ought in England."

perhaps two or three hundred ridges of corn belonging to as many people, and say John Such-a-one's corn is good, he has a good ploughman, and has managed well; when perhaps the next ridge belongs to a worse manager, therefore immediately censures him thus: Thomas has managed bad, his ploughman is bad, or he had not plowed it often enough, or he has not sown it right, or rolled, or weeded; or wherever the fault is, it is sure to be found out, and condemned by the sharp-eyed neighbours, and the owner shamed into a better manager, so that (in short) it fires every one with an emulation to out-do each other, and even extends itself to the very servants.

With what pleasure have I beheld two or three hundred teams, plowing in a field, every one striving to show the best work after him: how often do they make wagers (of perhaps a few quarts of ale, or the like,) which is the best plowed ridge, their masters to be the judge. Thus they strive to excel each other thro' the whole branch, as who keeps their teams in best order, and best geared, who sows best, so that the corn come up evenest after them, who mows best by leaving the stubble even cut, &c. who makes handsomest sheaves, who makes handsomest stooks, or has the fewest sheaves blown down after a high wind, who makes the handsomest loads of corn upon a waggon; for if a load fall from the waggon before it arrives at home, the loader forfeits something at the harvest-supper; also if a driver overturns a waggon, he forfeits a goose at the harvest supper. They often make wagers likewise, which team will draw the largest weight, also which is the most dexterous driver. To prove this they will lay a tenpenny nail in a turn in the road, and those that drive the waggon-wheel the truest over it is proved the best driver, and then the ricks of corn in the haggard are a standing witness who is the best stacker.

Again if a farmer (more curious than common,) introduce a strange crop on one of the ridges in this town-field, there is immediately a jury of farmers over it, and if in the end it prove of utility, it becomes general, as their land is all alike.

In short, I know not whether these town-fields may not inflame the spirit of improvement equal to a premium, since there may be the same ambition of excelling in one as another, as well in the little as the great world; so that in short, I believe these town-fields is the greatest spur to improvement of any thing that could be invented, which every judicious observer must admit.

The chapter was lengthened in *A New System of Husbandry* by a discussion of the evil of consolidation of farms for grazing, stressing the example of Ireland. Varley continued from the point where the extract ends: "For my part, I should think it a blessing to Ireland, if all or most of the land in it were

divided in these town-fields, as it would certainly put a stop to these monopolizers of land." After describing what had happened in Ireland, he concluded: "Then ought not England to take the alarm, and enact a law, to put a stop to the growing evil, by limiting the size of farms, to at most four hundred acres," but "the legislature, instead of putting a stop, is adding to the evil, by consenting to so many acts of parliament for inclosing open town-fields, and omitting to make such laws as would redress his Majesty's poor subjects."[1]

[1] *A New System of Husbandry*, I, pp. 292–7.

Notes and Comments

MEMORIAL TO JETHRO TULL

A memorial stone commemorating the baptism and burial of Jethro Tull at Basildon Church, Berkshire, has recently been erected in the churchyard. The stone is the gift of the Child-Beale Trust and was formally dedicated at a service held at the church on Sunday, 25 June 1961.

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The annual conference of the British Agricultural History Society was held from 5–7 April at Seale-Hayne Agricultural College. On the first evening papers were given by Mr Peter Holmes, the County Agricultural Officer, and Dr W. G. Hoskins. Mr Holmes discussed the farming regions of Devon; Dr Hoskins spoke on recent work on Dartmoor farmhouse types. The following day the conference visited Dartington Hall, and in the afternoon Dr Hoskins led an excursion over Dartmoor, visiting early farmhouses and a deserted village site below Houndtor. In the evening Professor Slicher van Bath, Head of the Department of Agricultural History at Wageningen, gave a paper on the use of farm accounts for the investigation of farm management and agricultural output from the Middle Ages to the eighteenth century. On the last morning Mr J. Z. Titow gave a paper on 'Some Effects of the Type of Manor on the Condition of the Peasant in the Thirteenth Century'. This was followed by a short paper by Professor M. W. Beresford on settlement patterns in early fourteenth-century Cornwall.

At the Annual General Meeting on the Friday morning, Sir Keith Murray was elected President, Professor Edgar Thomas Treasurer, and Mr J. W. Y. Higgs Secretary. Three members of the Committee, namely, Dr R. H. Hilton, Mr W. E. Minchinton, and Mr F. G. Payne, retired, and in their place the meeting elected Mr Andrew Jewell, Mr George Ordish, and Mrs Joan Thirsk. Giving the Report of the Executive Committee the Chairman, Mr Harwood Long, revealed that membership of the Society now stood at six hundred and three. He also explained that at the Editor's discretion the size of the REVIEW would from time to time be increased. During the year it had been possible to transfer £300 from current to deposit account, and the balance brought forward was £347 compared with £229 the year before. The year's working showed a surplus of £66.

At a meeting of the Executive Committee held later in the day Mr Harwood Long was re-elected Chairman.

FUTURE CONFERENCES

The December conference of the Society will be held jointly with the Association of Agriculture in London at the London School of Economics on Saturday, 2 December. The Annual General Meeting and Conference will be held from 11 to 13 April 1962 at Sydney Sussex College, Cambridge.

Holly as a Winter Feed

By JEFFREY RADLEY

"THERE is a curious way of feeding sheep in Derbyshire," says Sydney O. Addy in 1893.[1] This curious way is the providing of holly leaves and branches for sheep, and often cattle, as a principal winter feed. The use of holly has become obsolete in the present century, to the point that several farmers expressed amazement to the writer when informed of this custom. The custom, however, was an ancient one, and appears to have been of great importance in the years before hay and turnip winter feed.

BOTANICAL ASPECTS

Immediately the question arises: what about the prickles on the holly leaves? Abraham de la Pryme, the Yorkshire historian, records in 1697 that smooth-leaved holly was used as fodder.[2] In 1893 Sir Herbert Maxwell recorded that "No matter what the age of the holly, so long as the twigs are within reach of being cropped by cattle, so long will the leaves on them remain armed with protective spines, but as soon as they attain a safe height their leaves become as smooth as a camellia."[3]

Bean, the silviculturist, delimits the Common Holly (*Ilex aquifolium L.*) as a tree which may attain eighty feet in height. It is of a very leafy, much-branched habit, and trees propagated from seed lose their spininess as height increases; and he concludes from this that the spines on the lower branches are no doubt a protection against browsing animals.[4] An examination of almost any tall holly tree will substantiate this.

DISTRIBUTION

The practice of feeding animals on holly seems to have been confined primarily to the grits and sandstones of the southern Pennines. De la Pryme relates that "In the South West of Yorkshire, at and about Bradfield and in Darbishire, they feed all their sheep in winter with holly leaves and bark."[5] Other evidence is available to confirm this distribution, the most important being place-name evidence. The holly grove was important enough to warrant a name, and locally 'hollin' is the dialect word for holly, from Old

[1] S. O. Addy, *Hall of Waltheof*, 1893, p. 168.
[2] Abraham de la Pryme, *Diary. Trans. Surtees Society*, LIV, 1870, p. 165.
[3] H. Maxwell in *Notes and Queries*, 8th Ser., I, 1892, p. 462.
[4] W. J. Bean, *Trees and Shrubs Hardy in the British Isles*, I, 1914, p. 642.
[5] Abraham de la Pryme, *loc. cit.*

English 'holyn', or 'holegn', but not 'holm',[1] while the plural 'hollins' refers often to a group of trees. Sometimes the term 'a hag of hollins' is found, meaning a pasture of holly trees.

Village names containing 'hollin' as a component are rare, but there is a Hollinsend, Sheffield, and Hollingworth, Cheshire. On the high moors trees grow best in the entrenched cloughs, and there are several indicative names such as Holling Dale on Bradfield Moors; Hollingworth Clough, Hayfield; and Hollins Clough, Dovedale. Near Bolsterstone, Yorkshire, there is Hollin Busk and Hollin Edge Height.

More significant, but more difficult to trace, are field-names. De la Pryme says: "To every farm there are so many holly trees, and the more there is the farm is dearer, but care is taken to plant great numbers thereabouts." Hunter defines a 'hag' as "the holly trees growing upon a certain portion of ground in the Commons of the Manor of Sheffield. The lord was accustomed to let or sell them by the hag."[2] In Derbyshire's High Peak Hundred some twenty-one villages are shown by Cameron to have at least one field-name containing the component 'hollin', usually indicative of the pre-enclosure location of the 'hag of hollins' on a particular farm.[3] For example, at Chapel-en-le-Frith there is a Holling Flatt and a Hob Hollin; at Edale, Hollin Knoll; and at Stanton in the Peak a Holly Wood. Hathersage Enclosure Award shows Fields 785, 787, 788, and 789 as Far Hollins, Near Hollins, Hollin Meadow, and Hollin Pingle.[4] Similar evidence exists in South Yorkshire villages, for example in Ulley and Aughton.[5]

Another approach to the distribution problem, that of recording pure stands of holly trees, as indicators of surviving hags, might be an answer to Tansley, who says: "Occasionally it [the holly tree] forms pure local woods whose origin and status are not known."[6] Perhaps few stands of holly in our village woods are natural.

HOW HOLLY WAS USED

In the seventeenth century Evelyn remarked that holly branches were "lopped or broused by cattle,"[7] and as late as 1906 it is noted that "the leaves and small branches are sometimes used for feeding sheep in severe winters."[8]

[1] K. Cameron, *The Place-Names of Derbyshire*, 1951–2, p. 685.

[2] *Notes and Queries*, 8th Series, I, 1892, p. 431.

[3] Cameron, *op. cit.*, pp. 30, 38, 67, 79, 89, et al.

[4] Hathersage Enclosure Award, 1830. Sheffield City Lib. Dept. of Local History and Archives.

[5] Ulley Enclosure Award, 1798. County Record Office, Wakefield.

[6] A. G. Tansley, *The British Isles and their Vegetation*, 1939, p. 257.

[7] *Silva*, 1825 edit., p. 269, footnote.

[8] *Chambers Encyclopaedia*, 1906, V, p. 747.

Apparently the shepherd or cattle herder lopped a few upper branches from each tree, and this careful pollarding did not hurt the tree. The sheep appear to have been especially fond of the holly bark.

Evidence of the age of the practice of using holly is scant but the documents found are impressive. In Derbyshire the first reference is to the destruction of the Hollingwood at Hope in 1216–22,[1] while in Yorkshire at Heeley a 1320 deed records a grant of five acres in the field of "Heele holis."[2] Hollinclough, Derwent, is mentioned in 1381, and Hollywood in 1433 at Ludworth, Cheshire.[3]

Several fines occur in the Eyre Rolls for the illegal lopping of holly. At Tideswell Court in the Royal Forest of the High Peak ten people were fined for lopping 'green-wood' in 1524, twenty-four were subsequently fined in 1559, and twenty-one in 1567. In 1531 William Pyecroft denied felling the King's Woods in Edale, Derbyshire, "or lopping the same for his cattle."[4] At Holmesfield, Yorkshire, where there is a Holly Gate Farm, several fines were entered in the court rolls for cutting holly too often or illegally; Henry Ellott, for example, was fined "for carrying holly ("bowes") out of the lordship."[5]

Deeds, accounts, and rentals containing references to 'hollins' are infrequent but useful. In 1441–2, the duke of Norfolk's bailiff in Sheffield returned that "For holly sold here for fodder of the animals in winter time nothing is charged, because no sale took place this year."[6] In 1359 a sale of land at Fulwood "of all his wood growing in Fullewod in Hallumch'r except le Holyn," showed that it was a thing to be considered apart.[7] About 1550 Sir William del Holyns granted to Beauchief Abbey a place in "Le Holyns or Les Holyns" in "the soke of Eccleshall."[8] A Sheffield Rental for 1624 lists the rents of "Hollen." A total of twenty-three rents, each for a separate "hagge" of holly, principally in "Loxley" and "Rivelling," realized the considerable sum of £19 3s. 10d.[9] One could wish for more detailed evidence on this sale or leasing of individual stands of holly, and how the holly fitted into the general farm economy. Another use, the feeding of deer, is recorded in the 1652 lease of Wentworth Castle by William, earl of Strafford, to Sir Richard

[1] G. H. B. Ward, *Sheffield Clarion Ramblers Handbook*, 1949–50, p. 143.
[2] *Trans. Hunter Arch. Soc.*, II, p. 201. [3] K. Cameron, *op. cit.*, pp. 85, 143.
[4] *Victoria County History of Derby*, I, 1905, pp. 409, 410, 411.
[5] Court Rolls of Holmesfield, in *Journal of the Derbys. Arch. and Natural History Soc.*, XX, 1898, pp. 101, 115, 119.
[6] Sheffield City Libraries, Dept. of Local History and Archives, MD. 150.
[7] *Yorks. Arch. Journal*, XII, p. 249.
[8] S. Pegge, *An Historical Account of Beauchief Abbey*, 1801, p. 168.
[9] Sheffield City Libraries, Dept. of Local History and Archives, MD. 177.

Fanshawe, in which it is stipulated that the deer should be fed "For their better maintainance and support, by serving them with holley to be cutt therein in winter, and likewise with hay."[1] In 1811 that excellent observer John Farey noted that "At Rowlee in Hope Woodlands (Derbyshire), the sides of the hills were formerly scattered with Holly Pollards which they used to lop in severe winters for the sheep, with good effect."[2]

THE END OF THE PRACTICE

The decline of the practice was probably gradual, and only one reference has been found to the abandoning and destruction of holly hags. In 1711 the bailiff of the duke of Norfolk recorded sixteen entries of hollins with rent paid. He notes: "more Haggs of Hollin unlett but most of them destroyed," and a list enumerates several places west of Sheffield:

> "Dungworth Wood late George Gillott.
> Ughill Wood for which Mr. Marriott one paid 30d.
> Some in Stannington Wood.
> Some in Rivelin but most Cutt.
> *The best is to cutt and sell the above Haggs.*"[3]

It seems probable that holly was used as a supplement to, or in place of, hay, being cut when other feed was all used or when snow prevented the sheep and cattle from eating the poor moorland grasses. It would be particularly useful in the period immediately prior to the new grass crop and lambing time, and before the 'spring' wood could be cut. This latter was one of the uses of deciduous saplings as fodder, and perhaps it contributed to the development of the name Spring Wood—still a common name for local woods.

There is evidence in scattered place-names that the use of holly might have been much more widespread than is suggested above. However, it seems to have found its most conspicuous development in south-west Yorkshire and northern Derbyshire, where it contributed to the farm economy in no small measure for seven centuries. It may be that the enclosure of the commons with the removal of many 'hags', and the increased use of root crops for winter feed, were the two main reasons for the practice falling into disuse. Its secondary use as a source of shelter became superfluous with the building of dry stone walls on the enclosed commons.

[1] T. W. Hall, *Incunabula of Sheffield History*, 1937, p. 181.

[2] J. Farey, *A General View of the Agriculture ... of Derbyshire*, III, 1811, pp. 89, 90.

[3] Sheffield City Libraries, Department of Local History and Archives, Arundel Coll. L.D., 1711. No. 6, p. 32.

Agricultural Statistics in Scotland before 1866

By GEORGE HOUSTON

THE statistics of Scottish agriculture collected in 1845 and over the years 1853–7 were mentioned by Dr J. T. Coppock in his article in this REVIEW (IV, pp. 4–21, 66–79); and Mr W. E. Minchinton in a paper on agricultural returns during the Napoleonic Wars (I, pp. 29–43) referred to the collection of farming data for Sinclair's *Old Statistical Account of Scotland*.

The *Old Statistical Account* (1791–8) and the *New Statistical Account* (1834–45) are well-known sources for the Scottish historian, but though Highland data were used in M. Gray, *The Highland Economy, 1750–1850*, there seems to have been a reluctance to make use of the extensive agricultural statistics they contain. There are a number of possible reasons for this, not least that the extraction and analysis of parish statistics is a long and laborious task, without any definite promise that the fruits will be worth the trouble. Another probable explanation is that Sinclair, in his *General Report of the Agricultural State of Scotland* (1814), published livestock and crop statistics for Scotland that were no doubt assumed to be based on the parish reports in the *Old Account* as well as on the reports to the Board of Trade giving a "General View" of the agriculture of the various Scottish counties around 1800. Sinclair's estimates have been reproduced in later works on Scottish agrarian history. The purpose of this note is to show that some of his figures are misleading and to suggest a method by which they can be revised.

In Table I Sinclair's estimates of crop acreages and livestock numbers (*c.* 1810) are compared with the returns to the Highland and Agricultural Society for the years 1854 and 1855; data for 1868–9 are added as a check. The apparent decline in the tillage acreage over the period and the relatively high acreage of turnips in 1810 are unexpected and cast some doubt on the reliability of Sinclair's figures. A study of the county statistics available for these periods tends to confirm this suspicion. A number of the county reports to the Board of Trade already mentioned contained crop and livestock statistics, and in Tables II and III these are compared with the county data for 1855. While Sinclair's estimates for cattle and sheep are supported by the county data, his crop figures now look very unreliable. According to the county data, the acreage of turnips and sown grasses in 1855 was very much

TABLE I

LAND USE AND LIVESTOCK IN SCOTLAND, 1810, 1854–5, AND 1868–9
('000 *acres or head*)

	c. 1810	Average 1854–5	Average 1868–9
Wheat	140	180	130
Barley and Bere	280	215	225
Oats	1,260	933	1,015
Peas and Beans	118	43	25
Turnips	407	442	489
Potatoes	80	145	173
Flax	17	5	1
Fallow	219	24	55
Other crops	1	22	26
Unclassified Arable	—	238	—
Tillage	2,522	2,247	2,139
Rotation grass }	2,490	1,470	1,222
Permanent pasture }		1,277	1,065
Arable (excluding permanent pasture)		3,717	3,361
Total crops and grass	5,012	4,994	4,426
Agricultural Horses	243	183	187
Cattle	1,047	1,100	1,034
Sheep	2,851	5,906	7,054
Pigs	500	156	135

Sources: J. Sinclair, *General Report of the Agricultural State of Scotland*, 1814, III, Addenda, p. 5.
Transactions of the Highland and Agricultural Society, New Series, 1855–7, pp. 207–9.
Agricultural Returns.

higher than in 1810; this is more in line with what one expects, as the period is usually considered to be one in which the expansion of these two crops was a major feature of agrarian improvement. Further evidence would be very desirable, however, and the next step is to go back to the parish data in the *Old* and *New Accounts* and see whether these can help us to build up more accurate estimates of agrarian trends. There are about 1,000 parishes in Scotland and the extraction and aggregation of the relevant data for a large number of these areas can be carried out for *c.* 1792 (*Old Account*) and *c.* 1835 (*New Account*).

TABLE II

CROP ACREAGES IN SEVEN SCOTTISH COUNTIES, 1810–55
('000 *acres*)

County	Wheat		Barley & Bere		Oats		Potatoes		Turnips		Sown Grasses	
	c. 1810	1855	*c.* 1810	1855	*c.* 1810	1855	*c.* 1810	1855	*c.* 1810	1855	*c.* 1810	1855
Kirkcudbright	2	2	3	2	25	34	4	3	2	15	6	69
Wigtown	1	7	3	2	19	35	3	4	2	15	4	62
Midlothian (a)	10	8	11	11	25	23	2	6	3	14	21	33
Fife (b)	10	27	20	26	30	44	6	17	5	29	12	66
Kincardine	1	2	10	8	23	30	6	16	6	16	29	37
Aberdeen	1	5	25	12	152	170	4	8	20	80	..	..
Caithness	—	—	8	2	37	18	1	1	1	7	1	18
Totals	25	51	80	63	311	354	26	55	39	176	73	285

(a) About 1795. (b) About 1800. .. Not available.

Sources: for 1810, the *General Views of the State of Agriculture* in the relevant counties. for 1855, *Transactions of the Highland and Agricultural Society*, New Series, 1855–57, pp. 207–9.

TABLE III

LIVESTOCK NUMBERS IN EIGHT SCOTTISH COUNTIES, 1810–55
('000 *head*)

County	Horses		Cattle		Sheep		Pigs	
	c. 1810	1855	*c.* 1810	1855	*c.* 1810	1855	*c.* 1810	1855
Kirkcudbright	4	5	39	41	130	293	6	7
Wigtown	3	5	32	37	53	89	5	6
Fife (a)	..	..	60	41	..	..	..	..
Kincardine	2	4	25	27	25	27	1	3
Aberdeen	..	..	139	141	..	..	..	..
Stirling	4	5	19	29	38	85	..	..
Berwick	6	5	21	18	108	240	..	..
Forfar	8	9	37	51	60	100	..	..
Totals	27	33	372	385	414	834	12	16

(a) About 1800. .. Not available.

Sources: as for Table II.

One of the purposes of this note is to suggest a simple method of linking the figures in the *Old* and *New Accounts* with the parish returns collected since 1866. Only parishes within the county of Dumfries are used, for the application of the methods to the whole of Scotland is a very big task, and our hope is that others interested may be willing to co-operate in covering Scotland as a whole once some of the results of using the method are known.

There are 43 parishes in the county of Dumfries, and reports contained in the *Old* and *New Accounts* varied very much in the agricultural data recorded. For a few parishes, no useful statistics at all were given; in others the material was sketchy or incomplete, but a sufficient number of reporters gave the acreages of crops and numbers of livestock in a form which enables a comparison to be made with the years after 1866 when official parish returns are available. There is no way at present of checking the accuracy of the individual figures given in the *Accounts*, but most of the parish writers took their task seriously and there was no reason for there to be a consistent bias upwards or downwards in their estimates.

The method used in compiling Table IV was as follows. Where a number of reporters in either of the two *Accounts* gave the parish acreages of any crop or numbers of livestock, these were summed and then compared with the total acreages or numbers in the same parishes in 1866, 1913, and 1955.[1] The crop or livestock total calculated for the 1790's was taken as the base (= 100) and later years expressed as a percentage of that. The figures in the *Old* and *New Accounts* could rarely be compared directly (because the data on various items referred to different parishes in the two *Accounts*), but as a rule a comparison could be made using 1866 as the link. The changes between 1866, 1913, and 1955 suggested by the table do not correspond exactly to the changes shown by county totals, but the differences are rarely of any importance. The subscripts show the number of parishes on which each figure is based, and the more parishes covered the more reliable the figures are likely to be as a guide to county changes.

The table suggests a number of possible, but still highly speculative, generalizations about agricultural trends in Scotland which similar evidence from other parishes would help to substantiate or refute. Did the arable acreage double between 1792 and 1835? Did the tillage area increase by 50 per cent? Was the increase in livestock before 1866 (when tillage was rising) much slower than after 1866 (when tillage declined)? Is the present tillage acreage in Scotland approximately equal to that of 1792? These are some of

[1] The parish returns are not published but may be consulted in the Scottish Record Office or Department of Agriculture for Scotland.

the questions that the Dumfriesshire figures prompt. They may whet the appetite of other agrarian historians who are interested in such problems of general development.

TABLE IV

LAND USE AND LIVESTOCK IN DUMFRIESSHIRE, 1792–1955
(*c.* 1792=100)

	O.S.A. (*c.* 1792)	N.S.A. (*c.* 1835)	1866	1913	1955
Oats	100 (8)	127 (6)	117	109	84
Wheat and Barley	100 (9)	[127]	20	6	10
Tillage	100 (11)	150 (9)	147	124	100
Arable	100 (5)	200 (7)	230	236	240
Horses	100 (22)	..	100	103	26
Cattle	100 (23)	114 (11)	113	165	289
Sheep	100 (25)	116 (11)	134	206	190
Pigs	100 (8)	224 (8)	210	76	123

The figure in square brackets is a rough estimate based on the acreage of white crops.
.. Not available.
Sources: Old Statistical Account, New Statistical Account, and *Agricultural Returns.*

Some Terms used in Agrarian History

A GLOSSARY

By R. A. BUTLIN

EDITORIAL INTRODUCTION

AGRARIAN history, like other branches of learning, not infrequently finds itself bedevilled in discussion and exposition by ambiguity in the terms employed. Either the terms themselves lack precision, or the writer uses them in a sense different from that commonly understood, and feels safe in doing so because there is no generally accepted standard. The glossary which follows has been drafted by Mr Butlin at my invitation, as a first step towards the adoption of an agreed terminology. It deals principally with the language of open-field husbandry, and therefore should be regarded as a first instalment, to be followed later perhaps by a glossary of terms used in modern farming. The definitions it offers are provisional; readers who disagree with them are invited to propound alternative definitions of their own. It is published in the hope that after discussion and revision it will find acceptance with writers in this REVIEW and contributors to the *Agrarian History of England and Wales* now in progress.

ED., A.H.R.

ACRE. See LAND MEASUREMENT.

AGISTMENT. The pasturing of one person's animals on another's land on payment of a due. In relation to common land, it signifies the letting to another of a commoner's right to pasture his stock (but not a right APPENDANT).

APPENDANT. See COMMON, Right of.

APPURTENANT. See COMMON, Right of.

ASSART. A piece of land, taken from waste or forest, cleared of trees, and converted into arable (from French verb *essarter*, to grub up).

BALK (BAULK). An unploughed piece of land in a common arable field, with various uses: as an access path, by which a tenant could reach his land (known as a FOOTBALK); a boundary between shotts, strips, and other units of arable; or merely places which are unsuitable for cultivation. Balks were often grazed by tethered animals.

BEASTGAIT. See STINT.

BOVATE. See LAND MEASUREMENT.

BUTT. A section in a common arable field which has been shortened by the irregular shape of the field, and is therefore shorter than the others in the shott.

CALMING. The reaping of stubble left in the arable field after the ears of corn have been reaped.

CATTLEGAIT. See STINT.

COMMON APPENDANT. A right of common given by law to the freeholders of a manor (those who held land granted as freehold arable by the lord of the manor before the Statute of Quia Emptores in 1290) to depasture their commonable animals on the waste of the manor. At a later date, the right was limited to those commonable animals which were "levant and couchant" on the tenement, i.e. those commonable animals which could be maintained throughout the winter on the land to which the right was appendant. After 1290, the right could be claimed by prescription only.

COMMON APPURTENANT. A right of common of pasture which depends on express grant by the owner of the soil or on prescription, and is attached to a particular holding. The right may be granted to a person who is not a customary tenant of the manor, e.g. a freeholder who is a tenant in fee simple, and may exist in respect of animals other than commonable animals, and in respect of land which was not part of the ancient arable land of the manor.

COMMON ARABLE. Arable land, contained in common fields, which became commonable after harvest.

COMMON FIELD. Land cultivated in common, including arable and meadow land.

COMMON-FIELD HUSBANDRY. See FIELD SYSTEMS.

COMMON IN GROSS. A right to have grazing and other rights in the waste irrespective of any ownership of land, for the right is annexed to a man's person, either by grant to him and his heirs by deed, or it may be claimed by prescription.

COMMON LAND. Land subject to common rights.

COMMON MEADOW. Land, cropped for hay, which reverted, once the hay had been lifted (usually at Lammas-tide), to the whole community; then commonable animals were pastured on it. The common meadow was often low-lying alluvial land, adjoining a stream or river. If the ownership of the individual portions was not fixed, the strips of meadow might be allotted by rotation or by lot. See DOLE MEADOW, LOT MEADOW.

COMMON OF ESTOVER. The common right, appurtenant or in gross, to take wood from the waste or woods of a manor. This right includes: *Plowbote*, the right to take wood to repair ploughs, carts, and farm implements; *Firebote*, the right to take tree loppings for fuel; *Hedgebote* (or *Heybote*), the right to take wood for the repair of fences and gates; *Housebote*, the right to take wood to repair a house.

COMMON OF PASTURE. The most important of the rights of common. This includes Common Appendant, Common Appurtenant, Common in gross, Common pur cause de vicinage, and Common of Shack.

COMMON OF PISCARY. The right to fish in waters belonging to another person.

COMMON OF SHACK. The right of customary tenants and freeholders to pasture their commonable animals over the arable and meadow land of the manor between harvest and seed-time, or over the parts of the manor which were temporarily lying fallow.

COMMON OF TURBARY. The right to take peat or turf for fuel.

COMMON PASTURE. Land used exclusively for pasture by manorial tenants. The soil may be vested in the lord of the manor, or in undivided shares in the owners of the pasture right. Because the pasture could, in most instances, be grazed by a limited number of animals (see STINT), and often for only part of the year, the common pasture tended to be land of better quality than the common waste.

COMMON PUR CAUSE DE VICINAGE exists where there are adjoining wastes belonging to different manors, and tenants having a right of pasture over one of the wastes are allowed to pasture their animals on the waste of the other. The right is a permissive one, and overcomes the problem of excess litigation for trespass.

COMMON, RIGHT OF. A right of common is the right which one or more persons have to make use of, or take produce from, the land of another. In most instances the owner of the soil was the lord of the manor, who also enjoyed rights of common thereon.[1] The waste of the manor was vested in the lord in fee simple, but normally subject to customary common rights. In the arable and meadow the strips of the customary tenants were vested in fee simple of the lord of the manor, holding of the Crown, but these tenants had exclusive possession, subject to common rights. When the common arable and meadow were thrown open for pasturing of common-

[1] Some common lands are not in manors, e.g. the common lands of an ancient borough, or of a 'reputed manor'. See Royal Commission on Common Land, 1955–8, Report, Cmd 462, p. 170.

able animals, the ownership of the soil did not change, but the rights of pasture were common rights, because each tenant exercised rights over land other than his own. It is necessary to make the distinction between the rights of common, and sole or exclusive rights (see SOLE VESTURE and SOLE PASTURE).

Common rights evolved through "an increasing limitation of rights to more sharply defined classes of user. This limitation arose naturally from the pressure of a growing population upon a fixed supply of land throughout historic times. The degree of pressure, and hence the chronology of the limitation of common rights, varied according to local circumstances."[1]

COMMON WASTE. This term includes a wide variety of classes of land, all of which were either uncultivated or uncultivable. They were used as permanent sources of grazing for livestock, as sources of fuel, and of material for repairs of houses and implements, and they also allowed the expansion of the arable area to take place, by enclosure and improvement.

COMMONABLE LAND. Land communally used for part of the year (arable, meadow, and sometimes common pasture) which, after harvest, was pastured by the commonable animals until seed-time.

COMMONABLE ANIMALS. Those animals which the holder of a right of common of pasture may lawfully turn out on common or commonable land. If the right is appendant, only horses, sheep, and cattle may normally be pastured; if appurtenant, or in gross, other animals (e.g. pigs and geese) may be pastured, according to local custom. It is important to note, however, that the legal distinction between these types of right of common of pasture did not always obtain in practice, and rights of common of pasture were given for pigs, sheep, and goats—animals which in many areas were non-commonable.

CROFT. A small piece of land, frequently attached to a house, which was almost invariably enclosed. Crofts are occasionally located within common fields. See TOFT AND CROFT.

DEMESNE. (i) A feudal term, as in the phrase 'in demesne as of fee', meaning a tenement not sub-enfeoffed, i.e. kept in the hands of the owner and descending to his lineal and collateral heirs.

(ii) Agricultural demesne: demesne land is the reserve which the lord of the manor cultivates through his own agents so that he may directly consume or sell the produce, as distinct from land held by his tenants. The demesne was frequently sub-let, and could be worked by labour services, by hired labour, or by slaves.

(iii) ANCIENT DEMESNE. Land which had formerly been royal demesne land, but which had subsequently been alienated to other landowners.[2]

(iv) ROYAL DEMESNE. Demesne land which belonged to the Crown.

ENCLOSURE. The process of delimiting land by means of a fence or boundary, thus removing it, either temporarily or permanently, from common use. Permanently enclosed land was not usually subject to common rights.

ENCLOSURE IN SEVERALTY. The division of common or commonable land among all persons legally interested, usually in proportion to the value of their respective interests.

ESTOVER. See COMMON, Right of.

FALLOW. A period of rest or recuperation during which the ground was ploughed and harrowed, but not sown.

FIELD SYSTEM. The term has hitherto been used to signify "the manner in which the inhabitants of a township subdivided and tilled their arable, meadow, and pasture land."[3] The systems of husbandry based on the cultivation of common arable fields varied widely, both in regard to the rotation of crops over the arable area, and in regard to the type

[1] Royal Commission on Common Land, 1955–8, Report, Cmd 462, p. 150.

[2] For further discussion of the term, see R. S. Hoyt, *The Royal Demesne in English Constitutional History*, Ithaca, N.Y. 1950, and R. H. Hilton, *The Stoneleigh Leger Book*, Dugdale Society Publications, XXIV, 1960, pp. xxiv–xxviii.

[3] H. L. Gray, *English Field Systems*, Harvard University Press, 1915, p. 3.

and length of fallow. Thus terms such as 'two-field system' and 'three-field system' seem to have little precise significance. Perhaps it would be better to replace 'field system' with the term COMMON-FIELD HUSBANDRY, i.e. a system of husbandry based on the cultivation of common arable and meadow. Alternatively the term 'field system' could be retained, but its meaning restricted to: a system of husbandry based on two or more common arable fields which served as a framework for cultivation, but within which there were wide variations in cropping and fallowing practice. This would reject the idea, apparently inherent in the use of the term 'field system', that husbandry based on two or three fields of arable followed a fairly rigid pattern.

FOLD-COURSE. An area of common field and heathland, in a township including manorial demesne and tenant land, pastured by the flocks of two or more manorial lords. The common fields, heathlands, and closes of the township were divided into separate areas, and each was allotted to a flock for grazing at certain times of the year. Each area grazed by a flock was a 'fold-course' (Lat. *foldagium*). These were common in the 'sheep-corn' region of East Anglia.

FURLONG. A measure of length, originally the length of a furrow in the common arable field, which varied widely in different areas. As a statutory measure of length, it is equal to one-eighth of a statute mile, or 220 yards. The term had other meanings, e.g. a block of selions in the common arable field, for which the term SHOTT is here preferred (see below).

FURROW. A narrow trench made in the earth with a plough. See also RIDGE AND FURROW.

GAIT. See STINT.

GROSS. See COMMON, Rights of.

HEADLAND. A piece of land in a ploughed field, left for convenience in turning the plough at the end of the furrows, or near the boundary of the field.

HIDE. See LAND MEASUREMENT.

HIGHBACK. See RIDGE.

INFIELD. A common arable field under permanent cultivation, normally not sown with a winter crop but with a spring crop. Associated with INFIELD–OUTFIELD SYSTEM.

INFIELD–OUTFIELD SYSTEM. A system of husbandry characterized by the division of the cultivated area into INFIELD and OUTFIELD.

INNAGE. The cultivation of part of the fallow area of the common fields for a crop.

INTAKE. A piece of land enclosed from the waste, either temporarily or permanently, for the purpose of improvement.

INTER-COMMONING. The practice of pasturing the stock of two or more manors without hindrance on a contiguous common waste which had never been appropriated to a single manor.

LAMMAS LAND. A class of commonable land, normally meadow, communally held and managed for part of the year, but thrown open to commonable animals when harvest was over. The normal day for throwing open these lands was Lammas Day (1 August) and they remained open until Lady Day (25 March). Other dates were from Old Lammas Day (12 August) to Old Lady Day (6 April).

LAND (as ploughing term). See SELION.

LAND MEASUREMENT. Most of the units which were used for purposes of land measurement, in times when the science of exact areal measurement was unknown, have tenurial, fiscal, and agricultural connotations, and are, therefore, not simply land measures. Thus they can only be used to reflect land area in specific instances. "The hide, the carucate, and the sulung were evidently too elastic quantities to be regarded as measurements; but they keep all through their characteristic as shares, because whatever their arithmetical variations they are always equal as against each other within the limits of one and the same *tun* at one and the same time."[1]

(i) THE ACRE.

(a) CUSTOMARY ACRE. The acre was originally closely associated with ploughing technique and not with exact areal measurement. An acre was, in theory, the amount of land which a plough-team could plough in a day. Soil

[1] P. Vinogradoff, *The Growth of the Manor*, 1904, p. 152.

type, the number of oxen in the team, and local custom produced great variations in the actual size of the acre from region to region, although in some instances a certain size of acre became 'customary' or normal in an area. The customary acre differs from the statutory acre.

(b) STATUTORY ACRE. Statutory values of the acre were enacted in England by Acts of 5 Ed. I, 31 Ed. II, 24 Hen. VIII, and fixed the acre as a piece of land 40 poles long by 4 poles broad, or its equivalent of any shape. By the Act of 6 Geo. IV, the acre was fixed as a standard or legal measure of land in Britain. The statute acre is an area of 4,840 square yards.

(ii) THE HIDE. In Domesday Book, the majority of hides were reckoned at four yardlands, though there were variations. The hide was not an exact area but a complex unit having agrarian, tenurial, and fiscal implications. Some historians equate it with Bede's "land of one family," meaning the extent of land which either actually supported one family and its dependants, or for fiscal purposes was deemed capable of doing so. The hide was regularly used as a unit of assessment for the imposition of taxes. If the fiscal and agrarian functions can be distinguished in any instance, they may be termed FISCAL HIDE and FIELD HIDE respectively.

(iii) THE YARDLAND OR VIRGATE. The yardland is not a unit of exact land measurement, but represents a tenement of varying size measured in customary acres, and including arable with appurtenant meadow and pasture. The yardland or virgate might be subdivided into OX-GANGS (half of a virgate) or FERLINGS (quarter-virgates), both terms being primarily fiscal and areally inexact. In areas of Danish influence, different nomenclature was used. Within the wapentake (hundred) the CARUCATE replaced the hide, and the BOVATE was the equivalent of the OX-GANG. In south-eastern England the SULUNG was the equivalent of the hide, and was sub-divided into four YOKES.

LEVANT AND COUCHANT. The measure of the right of common appendant, consisting originally of the number of commonable animals permitted on a tenement, but which later became the number of commonable animals which could be maintained throughout the winer on the land to which the right was appendant. The rule was occasionally applied to appurtenant right.

LOT MEADOW (or Dole Meadow). A meadow divided into strips, the individual occupation of which is changed annually by the drawing of lots, but which is open at certain times of the year for grazing in common to all the temporary occupants of the lots.

MEADOW. Land cropped for hay.

OPEN FIELD. A confusing term, hitherto generally used to signify common arable fields (which were not always 'open'). It seems to be an over-simplification, stressing simply the contrast with the enclosed fields. The term could well be discarded, and more precise terms, e.g. 'common arable field', 'common meadow', used.

OUTFIELD. An area of common land in a township practising the infield–outfield system, part of which was periodically cultivated by the tenants of the infield. The periodicity of cultivation varied widely, but intervals of four to seven years were common.

OX-GANG. See LAND MEASUREMENT.

RIDGE. A piece of land thrown up by ploughing action. Some ambiguity has arisen from the use of the term in the phrase 'ridge and furrow': ridges are not invariably steep or high-backed, and are often ploughed flat.[1] The term HIGHBACK could be adopted to describe the steep ridges of many common-field areas.

RIDGE AND FURROW. The name often given to the regular corrugations which are evident in the surface of many fields on the present-day landscape, and are most obvious in grass-covered fields. The 'ridges' are the raised pieces of land, and the 'furrows' are the depressions which separate them. They frequently exhibit a sinuous reversed-S form, and ridge crests are often equidistant. They have been equated by some with the selions

[1] H. A. Beecham, 'A Review of Balks as Strip Boundaries in the Open Fields', A.H.R. IV, 1956, p. 29.

and furrows of the common arable fields of earlier times. But ridging of land was a common practice until the nineteenth century in areas of heavy soils, for drainage purposes, and many of the straight 'ridges' and 'furrows' (of varying amplitude) are attributable to this practice.[1]

ROTATION (OF CROPS). A change or succession of crops on a given piece of land. The number of units in a crop rotation does not necessarily correspond with the number of fields over which it operates.

SELION. The basic unit of ploughing in the common arable fields, the field being marked off into parallel widths called 'lands', of 22 yards or less. The Orwins describe the process of division of the arable field into these selions or 'lands'.[2] The term selion is here preferred, as 'land' has now acquired a large number of meanings. The term is synonymous with other local terms—'stitch', 'stetche', 'ridge', and 'rig'. Selions may take a variety of forms, some ridged (see RIDGE AND FURROW), some, on areas of dry soil, flat and separated not by furrows but by balks. The term 'strip' has occasionally been used synonymously with selion, but as there is doubt as to the equation of units of tenure with units of ploughing, 'strip' (see below) is here employed in a different sense.

SEVERALTY. Individual or unshared tenure of an estate or tenement. This term is used to denote individual tenure of land (usually enclosed) as opposed to tenure of land in common; the term can also be used to describe the exclusive occupation of strips of commonable land at those times of the year when common rights cease to be exercised over them.

SHEEP WALK. (*a*) A stretch of unfenced pasture for sheep. (*b*) A right vested in the lord of a manor to feed sheep on the lands of the manor, including tenant land, at certain times of the year.

SHOTT. A block of arable land, consisting of several or many selions, all running in the same direction, and having at either end a headland on which the plough-team could turn. This term could serve as a standard term, in preference to various words which have been used in the same sense, e.g. 'furlong', 'flatt', 'wong', etc.

SOLE PASTURE. The grant by the owner of the soil to another, of the exclusive right, in fee simple or in copyhold, to graze animals on the soil. Both sole vesture and sole pasture could be granted to several persons as tenants in common, and the land might then appear to be land subject to common of pasture. But these are not common rights because they are exclusive or sole rights.

SOLE VESTURE. The exclusive right, granted by the owner of the soil to another, to take the produce of the soil.

STINT. The number of animals which a holder of common right is entitled to put on to common land (usually common pasture). The stint is always for a specific number of beasts with an equivalent according to the type of stock and is normally proportionate to the size of the holding. Originally the stints were allocated only to copyhold tenements. Pastures which are stinted are known as STINTED PASTURES. The equivalent term in the North of England is 'gate' or 'gait'—hence 'cattlegait', 'pasturegait', etc.

STRIP. The unit of tenure in one place in the common fields (arable or meadow) held by one person.[3]

TENEMENT. The land held by a tenant in a community, i.e. his land in the common fields and the common rights attached to it. It includes his house and garden. In the courts, this term could be used of a very wide variety of holdings, especially 'free tenements'.

TOFT. This term is frequently found to be synonymous with Croft. See TOFT AND CROFT.

TOFT AND CROFT. These terms are used

[1] See M. W. Beresford, 'Ridge and Furrow and the Open Fields', *Econ. Hist. Rev.*, 2nd Ser., I, 1948; also E. Kerridge, 'Ridge and Furrow and Agrarian History', *Econ. Hist. Rev.*, 2nd Ser., IV, 1951.

[2] C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1938, p. 33.

[3] I am here adopting the use of the term suggested by Miss H. M. Clark, 'Selion Size and Soil Type', A.H.R. VIII, 1960, p. 91.

jointly to mean a homestead with an attached piece of land.

VIRGATE. See LAND MEASUREMENT.

WARREN. Land over which the lord of the manor had exclusive rights for the hunting of small game—rabbits, etc.

WASTE. See COMMON WASTE.

WATER MEADOW. An irrigated meadow. The floated water meadow, "technically the crowning glory of English agriculture," was an important type of water meadow, found mainly in Chalk areas, and introduced early into Wiltshire early in the seventeenth century.[1]

YARDLAND. See LAND MEASUREMENT.

[1] See E. Kerridge, 'Floating of Wiltshire water meadows', *Wiltshire Archaeological Magazine*, LV, pp. 105–18.

Livestock Remains from Four Medieval Sites in Yorkshire

By M. L. RYDER

THE purpose of this article is to summarize and compare the skeletal remains of livestock from some different medieval sites in Yorkshire. Two of these, Kirkstall Abbey and Pontefract Priory, are similar sites for comparison; the other two, York, a city, and Wharram Percy, a village, provide widely differing contrasts. In fact there were no striking differences between the sites in the animal remains found.

LOCATION OF THE BONE FINDS

Kirkstall Abbey, Leeds, was a Cistercian monastery which in the excavations of 1956–9 yielded bones from a large accumulation that probably began to form about the middle of the fifteenth century, and which may have been added to until the dissolution of the monastery in 1540.[1]

Pontefract Priory was a Cluniac monastery, the exact site of which had been lost until the waste land beneath which the ruins lie was levelled in 1932. The present article covers the animal remains found from 1957 to 1959 in the annual excavations led by Mr C. V. Bellamy. The community at Pontefract was always a small one, and the bones, numbering about 300, came from all over the site, no accumulation as at Kirkstall having yet been found. A number of human bones were found among the animal remains indicating disturbance, and although there were monastic 'finds' in the superficial ('plus') level, no conclusions could be drawn from the bones in this level because it was likely that many of them were modern.

The bones of the York collection came from an excavation in Petergate led by Mr L. P. Wenham in 1957 and 1958. These included more complete bones than found at Kirkstall and Pontefract, but they could be dated only as being between the eleventh and fourteenth centuries. Other finds were a concentration of horn cores that had been almost certainly associated with a horner's workshop, and two accumulations of shells. In addition, there were the remains of three horse skeletons of eleventh–twelfth-century date.

Wharram Percy was a medieval village on the Yorkshire Wolds six miles south of Malton, which became deserted about 1500. The bones discussed here, several thousand in number, came from the annual excavations of 1953–9 led by Mr J. G. Hurst. They came from all parts of the site, no particular accumulation having been found; the bones were on the whole fragmentary, but they were stratified to the thirteenth, fourteenth, and fifteenth centuries.

THE SPECIES FOUND

Most of the bones from all the sites were from the food animals: pig, ox, and sheep. Most bones from sheep cannot easily be distinguished from those of the goat, but the only certain finds from goat were a skull from Kirkstall and a few horn cones from the other sites, and it is likely that many more sheep than goats were kept. Therefore all the other bones that could have been from sheep or goats were assumed to be from sheep. There were a few horse bones from each site, and these were usually in groups indicating burial of the carcase. Bones from the domestic birds,

[1] The remains found up to 1957 were discussed by M. L. Ryder, *A.H.R.*, VII, 1959, pp. 1–5; those of 1958 and 1959 were described by the author in the annual excavation reports published by the Thoresby Society.

goose and fowl, were common on all sites except York. It is noteworthy that there were few remains of duck.

Red and fallow deer bones were found on all the sites, and roe deer remains on all sites except Pontefract. The monastic sites had more deer and wildfowl than the other sites. The only deer remains at York were antlers that are likely to have come from the horner's workshop, and not from food remains. Hardly any remains of wildfowl were found at York and Wharram.

Rabbit and hare bones were found on all sites except York. Other remains were dog, cat, black rat, mouse, and amphibian bones that could have come from either frogs or toads. All sites had fish bones, mainly of cod size, but some smaller bones that were probably from fresh-water fish. Finally, all sites had molluscan shells; oysters were the most common, even at Wharram Percy isolated on the wolds, and all sites except Kirkstall had edible land snails. However, the intention in this article is to discuss the remains from farm animals.

RELATIVE NUMBERS OF THE ANIMALS

It will be evident from the above that the wealthy monastic sites had the greatest variety of food remains, including more from wild animals and birds. The urban nature of York is reflected in the smaller variety of remains from wild animals, although it had the greatest variety of shell-fish.

Wharram Percy was the only site on which it was possible to make counts from different areas and at different levels. The different areas were the cellar of the manor house, some peasant houses from which the bones were stratified to the thirteenth, fourteenth, and fifteenth centuries, and House 10 stratified into seven levels from the late thirteenth century to the early sixteenth century, each level probably corresponding to the life of a house on the site. Counts showed no marked differences between the different areas, and no obvious trends with time.

From Table I it will be seen that only at Kirkstall was the proportion of ox bones as high as 90 per cent, with only 5 per cent sheep.

TABLE I

PERCENTAGE OF BONES FROM THE DIFFERENT SITES

	Ox	Sheep	Pig	Deer
Kirkstall	90	5	3	2
Pontefract	30	45	20	5
York	60	30	10	negligible
Wharram	30	60	8	2

York had 60 per cent ox and 30 per cent sheep; and whereas Pontefract, like Wharram, had 30 per cent ox, the relatively high proportion of pig bones (20 per cent) at Pontefract had probably reduced the ox percentage, and reduced the sheep proportion to 45 per cent. Nevertheless Wharram apparently had the greatest proportion of sheep bones.

Although it is true that the numbers of the bones from food animals indicate the number of animals eaten rather than the number kept, this high proportion of sheep bones found at Wharram is in keeping with the expected farming pattern of the area. It is possible that on a village site the animals were eaten in roughly the same proportions as those in which they were kept. A striking feature about Wharram was the relatively large proportion of horse bones compared with other sites. The proportions ranged from 2 per cent to 20 per cent in the different levels counted. The horse bones were omitted from Table I in order to make comparisons with the other sites. It is possible that the number of horse bones was artificially increased at Wharram because they came from complete skeletons. Even if this happened, Wharram would still seem to have had the most horses.

An explanation of the high proportion of ox bones at Kirkstall might be found in a comparison with Fountains Abbey. Mr Trow-Smith refers to Savine who stated that at the dissolution, Fountains Abbey had 2,356 horned cattle, but only 1,326 sheep.[1] It is

[1] R. Trow-Smith, *A History of British Livestock Husbandry to 1700*, 1957, p. 221; A. Savine, *English Monasteries on the Eve of the Dissolution*, 1909, pp. 193–7.

usual to keep more sheep than cattle, and Mr Trow-Smith thinks that Fountains Abbey must have been in a big way of business, as a breeder of beef and dairy cattle. Possibly Kirkstall Abbey, too, was in a similar position.

AGES AT WHICH THE ANIMALS HAD BEEN KILLED

Any bones lacking epiphyses (ends) indicate young animals. In addition, age is estimated more accurately from the stage of development of the dentition in complete jaws, and the degree of wear and the condition of the roots of individual teeth.

Most pigs on all the sites were killed at about the age of eighteen months. Hardly any remains were found from pigs older than this, but a few were found from young ones. Most cattle and sheep were at least two years old when killed, and cattle were killed at greater ages up to at least ten years. At Kirkstall and York few cattle and sheep were killed under two years of age, whereas at Pontefract and Wharram a fair proportion were killed under two years.

A detailed analysis of the age of killing of the remains in the House 10 area at Wharram was made for each level, but there did not appear to be any change in age of killing over the centuries. The mean percentage killed at each age over the whole period is shown in Table II. These findings apparently do not support Mr Trow-Smith's contention that sheep were kept to a relatively great age in order to obtain as many clips of wool from them as possible.

TABLE II

MEAN PERCENTAGES KILLED AT DIFFERENT AGES
(Wharram Percy House 10)

	Under 2	2 years	2 plus	5 years	5 plus	10 years
Sheep	30	35	39	12	3	–
Cattle	27	25	34	19	4	5

There was a wide range of age among the horses' teeth found at Wharram, from young to very old, presumably indicating that they had died a natural death. Some horse molars were worn literally to the roots, and in one, wear had exposed the pulp cavity.

THE TYPE OF LIVESTOCK KEPT

On the whole most bones were from smaller animals than those of today, the bones being particularly more slender. The measurements it was possible to make are recorded in the original reports, and it seems that the animals at Wharram were smaller than those at other sites.

There were sufficient *ox* bones from Kirkstall for a study of the size of the animals to be made. The widths of the upper and lower end of the metapodial bones were measured and the results plotted in the form of a frequency diagram. There was a wide range in the measurements, but three peaks could be distinguished. The peak among the broad widths probably indicated bones from bulls, and that among the narrow widths probably indicated bones from bullocks, i.e. castrated males. One would expect more males than females to have been eaten, but the bullocks were probably not just beef cattle. The great age of some of the animals and the large size of many of the bones suggested draught oxen. Many of the ox ankle bones from Kirkstall were unusual in having wide lower ends, and a few like this were found at Wharram. It may be that the oxen had large feet.

Not a single ox horn core was found at Kirkstall, and I thought at first that the cattle must have been hornless. But when the accumulation of ox horn cores was found at York, it suggested the alternative that the horns had been removed and sent to a horner.

There were nearly two hundred cattle horn cores from York, most of which had moderately large portions of the skull remaining attached to them, but some had been sawn from the skull, and some had had their tip sawn off. They were of interest because of the lack of a complete horn core from any of the other sites. The cores were of short-horned type; most were of similar shape curving gradually upwards, a few curved sharply upwards, and some, after such curving, twisted at their tip to point in a posterior direction.

A few were flattened dorso-ventrally, and were more straight than the rest. These variations would seem to suggest breed differences, but the small number of cores involved tends to lessen the significance of the different shapes, and they might well be variations within a breed.

There were over a hundred cores sufficiently complete to be measured, and in these the length around the curve from the base to the tip, and the circumference at its broadest point near the base, were measured to the nearest centimetre. The circumference of each horn was of a similar value to the length. The lengths ranged from 9 to 22 cm. and a frequency diagram of the lengths had a skew distribution which indicated that most of the cores were short, 13 cm. being the most frequent length. A frequency diagram of the circumferences had a similar pattern. Thus unlike the foot bones at Kirkstall there was not more than one peak, and therefore nothing to suggest that the horn cores were from other than a homogeneous population. On the other hand, it is possible that two or more populations (e.g. males and females) were hidden in the distribution owing to overlapping measurements. However, it seems that the cattle were of a similar breed type showing no marked sex difference in horn size. It is possible that the range of measurements was associated with a range of ages; many of the smaller cores were from young animals.

Hardly anything is known about the appearance of medieval cattle. According to Mr Trow-Smith the famous northern short-horned stock which George Culley wrote about in 1786 originated, at least in part, from Dutch imports into Lincolnshire in the late sixteenth or early seventeenth century. The horn cores found at York apparently represent an even older short-horned stock. Some leather found among the bones was examined microscopically,[1] and well-preserved cattle hairs were revealed embedded in the leather. These had little pigment, and so could have come from a white or grey animal (or patch on an animal).

In contrast to the cattle horn cores, the *goat* horn cores from York had a marked sex difference in size. There were eleven from females ranging from 130 to 190 mm. in length and twelve from males ranging from 180 to 250 mm. in length.

The finding of both horned and hornless *sheep* skulls at Kirkstall provides support for the generally accepted belief that the Cistercians had long-woolled as well as short-woolled sheep. Whereas short-wools are likely to have horns, long-wools are extremely unlikely to have them.

There was no evidence of hornless sheep at Pontefract, and there was only one skull from a hornless sheep at Wharram. But hornless skulls readily break up into unidentifiable fragments, whereas if a horned skull breaks, the horn core usually remains intact. There were, however, few horn cores from either of these sites. There were equal numbers of finds from horned and polled sheep at York, and as hornless skulls are more likely to have broken, one might argue that here there were relatively fewer horned animals than at Kirkstall, where the horn finds predominated. On the other hand, this may merely represent the true situation, the hornless skulls having been better preserved at York. Most of the horn cores were similar in shape to those of modern sheep, but some at Wharram had a more shallow curve, suggesting the Soay type of sheep. Microscopic work on the wool fibres remaining embedded in medieval parchments has suggested that the Soay type of sheep persisted, along with other types, in England as well as Scotland in the Middle Ages.[2]

When three sizes of *pig* tusks were found at Kirkstall it was thought that the smallest, having a groove in their upper surface, were so different that they might be from wild pigs. Such teeth were later found in jaws from young animals and were thus shown to be characteristic of young, and not wild, pigs.

The remains of the three *horse* skeletons found at York were of interest because they were of eleventh–twelfth-century date. They were of pony size, and one had a well-pre-

[1] M. L. Ryder in *Nature*, 182, 1958, pp. 781–3.

[2] *Ibid.*, 187, 1960, pp. 130–2.

served skull, the dentition of which showed it to have been between five and seven years of age, i.e. just beginning its working life. Although the upper and lower canine teeth did not meet, both showed wear, suggesting that the animal had worn a bridle or bit.

The apparent high proportion of horse bones at Wharram is interesting, but what the horses were used for is not clear. It is thought that the predominant draught animal in the Middle Ages was the ox, and in any case these animals were of only pony size. They may have been pack or riding animals, and it is possible that Wharram may have been a breeding centre for such ponies. Mr Trow-Smith says that horses, and even whole stud farms, are mentioned in wills as early as the tenth century. But in order to substantiate this suggestion of Wharram as a breeding centre it will be necessary to make sure that other medieval villages do not have a similar high proportion of horse bones.

The *fowl* bones were on the whole little smaller than those of modern fowls, except at Wharram where most were of only bantam size. Some of the leg bones had spurs, suggesting that they had come from fighting cocks. There were two sizes of *goose* bones, which could indicate that wild as well as domestic geese were eaten.

ABNORMAL AND DISEASED BONES

An abnormality in the well-preserved *horse* skull from York was a small subsidiary tooth behind the lower left lateral incisor. This moved independently from the incisor, and was therefore not part of it. The same skull had a small circular area on the maxillary plate supporting the roof of the mouth in which the texture was porous and the surface uneven. This could have been associated with an inflammation of the mucous membrane of the mouth, and although it might have arisen from any ulcer, it could have been caused by an ulcer of a disease like glanders. This may be a clue to the cause of death.

There were a number of cases of arthritis and ostitis. The first and second phalanges from a *sheep's* foot found at Wharram had a peri-ostitis (extra growth of bone on the surface). The first bone was badly affected over the whole of its length, but the second bone was only affected in the upper part, although the two bones were not fused together. In the original report it was thought that this condition could have been caused by foot-rot; it is now realized that it could have had a number of causes. A foot joint of a *horse* from Wharram was so badly affected that the first and second phalanges, the bones on either side of the joint, had become fused rigidly together. This condition is known as high ringbone, and is still common today, often causing lameness, but not usually preventing the horse from working; the cause is unknown. The first phalanx of an *ox* from Wharram had an articular surface showing erosion and new growth of bone around the edge. This suggested a severe septic process in the foot.

An ulna of a young *ox* from Wharram had an arthritis and ostitis of the elbow joint. The immaturity of this animal suggests that this condition might have been caused by joint-ill. The distal end of an *ox* metatarsal from Kirkstall had an ostitis around the edge of the articular surface. This arthritis may have affected the articular cartilage, but the underlying bone of the articular surface was unchanged.

Kirkstall also yielded the body of a vertebra, probably from an *ox*, which had a spondylitis in which new growth had resulted in bone extending over the intervertebral disk to produce a 'lipping' effect. At Wharram there was a vertebra from a sheep or a dog which had been deformed in such a way that the anterior end had a slant instead of being vertical. There was also a *pig's* lower jaw with the seventh (trilobed) molar erupting (surface unworn and roots only beginning to form) almost upside down in the jaw. It is thought that this could have turned over as a result of unusual pressures, e.g. from the angle of the jaw adjacent to it, possibly caused by shortness in the jaw, and that the tooth would probably eventually have acquired its normal orientation. A *pig* tusk was found at Kirkstall

with an unusual bend about 1 cm. from its root end. This suggested that an injury had affected the growth. In addition, there was an incrustation of bone around the part normally exposed in the mouth.

The most unusual abnormality found was some holes in portions of the skull remaining attached to the *cattle* horn cores from York; the cause of these is unknown. At least five of the skull parts had one to three of these holes in the parietal bone on the posterior aspect of the skull not far below the suture between the frontal and parietal bones. The holes penetrated the outer plate of the bone and entered the central cavity which is continuous with the cavity of the frontal bone and the horn core. The inner plate of the bone was not pierced. These holes had not been made after death, nor had they been caused by decay during burial.

Some of the skulls had holes which were in line with a smaller hole, 1 mm. or less in diameter, that was often at the base of a dimple, and was probably the opening for a blood vessel, but may have been an unnatural hole. Some of the holes were oval, being 1–2 mm. wide, and up to 8 mm. long; in this the bone at the edges was thin. The largest holes, apparently in the older skulls, were about 8 mm. across, being oval, triangular, or circular in shape, and one of these had a short branch which appeared as if the edge had been eaten away. These holes passed vertically through 2–3 mm. of bone, and although the edges were straight they were somewhat rounded, apparently by growth.

There are several possible explanations for the holes, not one of which is entirely satisfactory. It is inconceivable that they had been bored by a parasite, but the holes may have been man-made, i.e. bored while the animal was still alive in a primitive custom designed to drain the sinus within the bone. One could interpret those with straight edges through thick bone as having been bored not long before death, which may have been the result of making the holes; these appeared to have had something in them preventing the edges of the bone from meeting; those through thin bone would be in the process of healing. This explanation is opposed by the fact that sometimes part of the edge of a hole was continuous with one of the septa between the inner and outer plates of the bone, thus suggesting that they had not been bored. I am indebted to Mr M. M. McKinnon, Lecturer in Preventive Medicine at the University of New England, for the suggestion that they may have been caused by an acute inflammatory condition, and that the holes were the result of increased vascularization. Oxen wearing a yoke might be predisposed to this type of condition.

Finally, one might mention several lower halves of sheep tibiae from Wharram which had a hole near the lower end. The holes did not usually go right through the bone, and it was not clear whether or not they were man-made. Bone implements have not been described in this article, but it is interesting to speculate on the possible use of these. Mr Megaw illustrates similar bones with one and more holes which were in fact whistles and pipes, the hole formed at the point at which the bone was broken in two being the blow-hole.[1] Could it be that these bones from Wharram represented attempts at making shepherd's whistles?

This article has shown the way in which medieval archaeology can help agricultural historians by throwing light on the livestock of the period, and I hope that it will stimulate the examination of animal remains from other sites.

[1] J. V. S. Megaw, 'Penny Whistles and Pre-history', *Antiquity*, XXXIV, 1960, pp. 6–13.

Letter to the Editor

SIR,—I read with interest Dr Ryder's letter on sheep treatment in Volume IX of the REVIEW. I can assure him that the practice he describes is far from extinct, and can possibly add a little to his observations.

This operation is in use by the great majority of the farmers who run fell flocks in the dales of Durham. I would estimate that 65 per cent of flocks are so treated regularly while those who use it occasionally must bring the numbers to over 75 per cent. It is used in the treatment of 'Double Scaup'. The hoggs (lambs) are 'scauped', 'cracked', or 'knocked' as Dr Ryder indicates, on the frontal bone. Some farmers use a rounded pebble, some the butt of a penknife, but most use their knuckles. The bone cracks audibly if at all. In practice every sheep knocked by an experienced shepherd 'cracks'; this is a matter of 'eye'. An almost uncanny knack of predicting can be learned and although they are usually 'knocked' at dipping or some such time of gathering, it is very common to catch odd hoggs that are not doing well and 'knock' them on the spot. I have seen this done and have noted the progress of the lamb in the next few weeks without change of pasture or any dosing.

I have heard members of the veterinary profession condemn the practice and deny that 'Double Scaup' was a disease in itself. It is often held that the thinness of the outer plate of the frontal bone is possibly symptomatic of other conditions which are causing unthriftiness, e.g. worm infestation. Many flockmasters hold a contrary view and regard the condition as a disease in its own right. I must admit that my own observation of the accuracy with which they can diagnose, or possibly I should say predict, the condition, and the universal account of the benefits, incline me to think that there is at least a case for investigation.

I am dubious about the association with Sheep Nostril Fly (*Oestrus ovis*) attack. Not one of my informants has mentioned this pest in this connection; nor have I any indication that it has even been prevalent in this area. The increased secretion of hormones is an interesting suggestion. I have had several attempted explanations. Many say that it is done to break an air bubble which forms and stunts growth. More compare it to 'cutting' a cow for felon (this is the practice of making an incision, usually in the brisket, and inserting a leaf, either fresh or dried, of 'felon grass' (*Helleborus viridis*), securing with a stitch, and later removing the leaf and the consequent pus), thus supporting to some degree a theory of increased secretion of hormones or white blood corpuscles. By far the most of those who use the practice advance no explanation except that it is a matter of common knowledge and that it works.

It may be of interest to note that while it is almost invariably the hoggs that are 'cracked', some shepherds will say that odd shearlings may need a 'crack', though this seems a rather controversial view.

I can add nothing to the tale of the distribution of the practice. As far as I know it is in current use throughout the northern Pennines.

Yours faithfully,

J. A. NEWRICK

High Whitestones, Ireshopeburn,
Bishop Auckland, Co. Durham.

Work in Progress

Compiled by JOAN THIRSK

The following list does not lay claim to completeness. It has been compiled from the particulars given in response to a letter circulated to universities, local history societies, and local record offices. It is hoped to publish similar lists from time to time, and the compiler will therefore be glad to receive any information concerning changes of subject and additions to this list.

ABERG, F., *Tudor House Museum, St Michael's Square, Southampton.*
Roman agriculture and settlement in Hampshire.
Ancient fields in Hampshire.

ALLISON, R., 71 *Shirley Avenue, Sutton, Surrey.*
The changing landscape of S.W. Essex, 1600–1850.

ASKEW, G. P., *Wye College, near Ashford, Kent.*
Field evidence of medieval and later land reclamation and drainage of Romney marsh.

BAKER, A. R. H., *Department of Geography, University College, London.*
Fields and field systems in Kent in the sixteenth and seventeenth centuries.

BARLEY, M. W., *Department of Extra-mural Studies, Nottingham University.*
Rural housing.

BATHO, G. R., *Department of Education, Sheffield University.*
The management of Crown and lay estates in the period 1500–1640.
Estate maps and plans, 1590–1640.

BATLEY, Mrs L., *Department of Latin, Sheffield University.*
The manor of Tinsley in the seventeenth century (from the Wentworth-Woodhouse papers).

BEAVINGTON, F., 39 *Snow Hill, Maulden, Bedford.*
A geographical study of market gardening in eastern and central Bedfordshire.

BELLERBY, J. R., *Agricultural Economics Research Institute, Parks Road, Oxford.*
Historical statistics of agriculture.

BEST, ROBIN H., *Department of Agricultural Economics, Wye College, near Ashford, Kent.*
A comparative analysis of changing land-use patterns in several technically advanced countries, including Britain and the United States.

BIRRELL, Miss J. R., *School of History, Birmingham University.*
Staffordshire and Derbyshire estates of the Duchy of Lancaster.

BLACKMAN, Miss J. M., *Department of Economics, Sheffield University.*
Methods and problems of the distribution of food in Sheffield and area from the late eighteenth to the end of the nineteenth century.

BONHAM-CARTER, VICTOR, *Broomball, East Anstey, Tiverton, Devon.*
The future of the village.

BOWDEN, P. J., *Department of Economics, Sheffield University.*
Rents, agricultural prices, and profits, 1450–1640.

BUCHANAN, R. H., *Department of Geography, The Queen's University of Belfast.*
The 1801 crop returns.
Population movements in Northern Ireland during the nineteenth century.

BUTLIN, R. A., *Department of Geography, Liverpool University.*
The evolution of the agrarian landscape of Northumberland, 1500–1900.

CAIRD, JAMES B., *Department of Geography, Glasgow University.*
Evolution of settlement in the Outer Hebrides and Glenshee (Perthshire).

CAIRD, JAMES B., *and* MOISLEY, H. A., *Department of Geography, Glasgow University.*
Crofting survey: a survey of land use and population, by individual townships of selected areas—South Uist, Barra, Harris, Lewis, Waternish (Skye), Uig, North Lochs, and North Uist.

CHAMBERS, Professor J. D. (ed.), *Department of Economic History, Nottingham University.*
Laxton, 1750–1950.

CLARK, Miss H. M., *Department of English Local History, Leicester University.*
The Cambridgeshire yeoman in the sixteenth and seventeenth centuries.

COLES, Mrs GLADYS M., *School of History, Liverpool University.*
The lordship of Middleham, especially in Yorkist and early Tudor times.

COPPOCK, J. T., *Department of Geography, University College, London.*
The agricultural geography of the Chilterns, 1870–1951.
Changes in farm size in Buckinghamshire.
Agricultural change in England after 1870.

COSSEY, F., 32 *West Parade, Peterborough.*
Farm workers' trade unions in the fenland area of South Lincolnshire, Hunts., the Isle of Ely, and the Soke of Peterborough, 1871–82.

COTTEE, B. L., *Department of Agricultural Economics, Manchester University.*
Agricultural production in England and Wales, 1815–55.

COUSENS, S. H., *Department of Geography, University College of Swansea.*
Post-famine Irish agriculture.

DAVIES, Mrs C. S., *Durness, Robin Lane, Sutton, Macclesfield, Cheshire.*
Medieval records of Macclesfield.

DODD, J. PHILLIP, *Hampton Loade, Alveley, Bridgnorth, Salop.*
Shropshire agriculture in the nineteenth century.
The 1854 crop returns.
Lancashire during the French Revolutionary wars.

DOUCH, ROBERT, *Institute of Education, Southampton University.*
Some aspects of the history of agriculture in the Isle of Portland.
Bibliography of local history of Hampshire and the Isle of Wight.

EMERY, FRANK, *School of Geography, Oxford.*
Regional farming in Wales, 1500–1640.
Agrarian change in Gower, 1500 onwards.

EVANS, Professor E. ESTYN, *Department of Geography, The Queen's University, Belfast.*
Survival of primitive agricultural techniques.

EVERITT, ALAN, *Department of English Local History, Leicester University.*
The marketing of agricultural produce, 1500–1640.
The agricultural labourer, 1500–1640.
Northampton: market and county town, 1500–1760.

EYRE, S. R., *Department of Geography, Leeds University.*
The limits of improved land and common pasture in North Derbyshire from medieval times.

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The peasant land market in Berkshire in the fourteenth and fifteenth centuries.

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The Worcestershire peasant in the later Middle Ages.

FINBERG, H. P. R., *Department of English Local History, Leicester University.*
The structure of rural society in the Anglo-Saxon period.

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Draining and improvement in Lancashire, 1800–50.
The nineteenth century.

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The estates of the de Veres, Earls of Oxford, 1360–1526.

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County administration in Yorkshire in the seventeenth century.

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Agriculture and settlement in N. Co. Antrim from the seventeenth to the nineteenth century.

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The classical tradition and West European farming.

GAILEY, R. A., *Ulster Folk Museum,* 53 *University Street, Belfast,* 7.
Innovation and traditionalism in rural Ireland.

GLASSCOCK, R. E., *Department of Geography, The Queen's University, Belfast.*
The mapping and interpretation of the lay subsidy return of 1334.

GRANT, Mrs B. F., 78 *Twyford Avenue, London, W.*3.
History of Wensleydale, Yorkshire.

GREEN, GEORGE H., *School of Agriculture, Sutton Bonington, near Loughborough, Leicestershire.*
The agrarian and manorial history of Castle Donington.
Agricultural trade on the Trent, 17th–19th centuries.
Little empires on the Wreake, in settlement, expansion, and decay.

GRIGG, D. B., *St John's College, Cambridge.*
Agricultural change in south Lincolnshire, 1790–1875.

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English aristocracy and gentry in the seventeenth and eighteenth centuries.

HARRIS, ALAN, *Department of Geography, Hull University.*
The agricultural geography of England and Wales in the 1830's.
Common land in the East Riding of Yorkshire.

HARRISON, B. J. D., *Wadham College, Oxford.*
The estates of St Swithun's Priory, Winchester, 1066–*c.*1340.

HARVEY, D. W., *St John's College, Cambridge.*
Studies in the historical geography of Kent.

HAVINDEN, MICHAEL, *Museum of English Rural Life, Reading University.*
The rural economy of Oxfordshire, 1580–1730.
An economic, social, and cultural survey of two Berkshire parishes.

HENDERSON, H. J. R., *Department of Geography, University College of Swansea.*
The development of the hop-growing industry in Kent and its effects on the modern landscape.

HIGGS, J. W. Y., *Department of Agriculture, Parks Road, Oxford.*
The agrarian history of England, 1750–1850.
The British plough.

HILTON, RODNEY, *School of History, Birmingham University.*
Agrarian history of the West Midlands.

HOCKEY, Rev. S. F., *Quarr Abbey, Isle of Wight.*
Medieval Quarr Abbey and its estates, mainly I.W.

HOPKINS, P. G. H., *Fircroft College, Selly Oak, Birmingham.*
The rise and fall of water-meadow irrigation in Britain.

HOSKINS, W. G., *All Souls College, Oxford.*
Social and economic history of England, 1500–1640.

HOUSTON, GEORGE, *Department of Political Economy, Glasgow University.*
Production, prices, and wages in Scottish agriculture since 1790.
The history of the Scottish farm worker.

HUNT, H. G., *Department of Commerce, Woolwich Polytechnic, S.E.*18.
The impact of economic change on rural society in south-east England during the eighteenth and early nineteenth centuries.

HURST, J. G. (secretary of D.M.V.R.G.), *Lambeth Bridge House, S.E.*1.
Gazetteer of deserted villages in Northamptonshire and Oxfordshire.

JENNINGS, BERNARD, 2 *Conan Gardens, Richmond, Yorks.*
Agriculture and mining in Nidderdale, 500–1801.

JOHNSON, J. H., *Department of Geography, University College, London.*
The historical geography of nineteenth-century Ireland.

JONES, E. L., *Department of Agriculture, Parks Road, Oxford.*
The evolution of high farming, 1815–65, with reference to Herefordshire.
Revised edition of T. H. Baker's *Seasons and Prices.*
Agriculture in the Wessex Chalklands, 1660–1960.

JONES, GLANVILLE, *Department of Geography, Leeds University.*
Land settlement, tenure, and utilization in the Conway-Clwyd district of North Wales.
The heritage of Celtic territorial organization in England.

JONES, T. I. JEFFREYS, *Coleg Harlech, Llys Branwen, Harlech, Merioneth.*
Welsh agriculture, 1700–1900, with special reference to the enclosure movement.

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Agrarian development in the Banff district.

KERR, Miss BARBARA, *Ash Cottage, Hethfelton, Wareham, Dorset.*
The agricultural history of Dorset, 1750–1850.

KERRIDGE, E., *Acre End, Llanfairpwll, Anglesey.*
English agrarian history in the sixteenth, seventeenth, and eighteenth centuries.

KIDDLE, D. F. A., *Ruislip, Pwll Evan Ddu, Coity, Bridgend, Glamorgan.*
The changing landscape of north-west Middlesex, with special reference to the parishes of Harefield, Ickenham, and Ruislip before 1900.

KINVIG, Professor R. H., *Department of Geography, Birmingham University.*
Agricultural geography of the West Midlands.

LAMBERT, Miss AUDREY M., *Department of Geography, London School of Economics, Aldwych, W.C.2.*
Land use changes in central Oxfordshire.

LAWTON, R., *Department of Geography, Liverpool University.*
Population distribution, structure, and movement in nineteenth-century England.

LINES, C. J., 38 *Nelson Road, South Chingford, E.4.*
The development and location of agricultural engineering in the eastern counties.

LLOYD, H. A., *Jesus College, Oxford.*
The gentry of south-west Wales, 1540–1640.

LLOYD, T. H., *School of History, Birmingham University.*
Medieval Oxfordshire estates, especially those of Osney and Eynsham abbeys.
Agricultural prices in the later Middle Ages.

LONDON, Miss VERA, *School of History, Liverpool University.*
The cartulary and extents of Canonsleigh Priory.

LONG, HARWOOD, *Agricultural Economics Section, Leeds University.*
The development of Yorkshire farming since the seventeenth century.

LOUGHBROUGH, B., *Museum of English Rural Life, Reading University.*
The geographical and social changes resulting from enclosure in selected Berkshire parishes.

MARTIN, J. M., *Faculty of Commerce and Social Science, Birmingham University.*
A fresh investigation into the relationship of enclosures and population change in the Midlands from 1760–1815, on the basis of enclosure awards, land tax assessments, parish registers, and similar documents.

MASON, Mrs KATE, *Reynard Ing, Ilkley, Yorks.*
A history of cheesemaking in Britain.

MASON, R. J., 289 *Leeds Road, Nelson, Lancs.*
The income, administration, and disposal of monastic lands in Lancashire, *c.*1536–58.

MCHUGH, B. J., *Department of Geography, St Patrick's Training College, Drumcondra, Dublin.*
Land use and rural settlement in counties Dublin, Waterford, Donegal, and Sligo.

MCQUEEN, J. D. W., *Department of Geography, Glasgow University.*
Geographical evolution of the Scottish dairy industry.

MEAD, W. R., *Department of Geography, University College, London.*
Hedgerows and field boundaries.
Per Kalm's journey in the eastern Chilterns, 1748.

MILLS, D. R., 278 *Leicester Road, Field Head, near Markfield, Leics.*
The social geography of Leicestershire, *c.*1850.
The influence of different structures of landownership on local geographical patterns in England, past and present.

MILLS, F. D., *Department of Agricultural Economics, Reading University.*
The National Union of Agricultural Workers—a case study of trade unionism in British agriculture.

MINGAY, GORDON, *London School of Economics, Aldwych, W.C.2.*
Landownership and agrarian trends in the eighteenth century.
Agricultural labour in the nineteenth century.

MOISLEY, H. A., *Department of Geography, Glasgow University.*
Field systems and settlement forms in the Outer Hebrides.
See also under CAIRD, J. B.

NEWLYN, ANNE C., *Department of Agricultural Economics, Reading University.*
The village and manor of Coleshill, Berkshire, 1500–1700.

OLDFIELD, FRANK, *Department of Geography, Leicester University.*
Pollen analytical evidence for land use history.

OSBORNE, B. S., *Department of Geography, Southampton University.*
A study of the common lands of Glamorgan.

OSCHINSKY, Miss DOROTHEA, *School of History, Liverpool University.*
Treatises on estate management and farming in the Middle Ages.

OWEN, ARTHUR, 21 *Whitwell Way, Coton, Cambs.*
Land drainage and reclamation in the marsh district of Lindsey.

PAWSON, Professor H. C., *University School of Agriculture, King's College, Newcastle-upon-Tyne.*
An agricultural survey of Northumberland (for the R.A.S.E. series).

PEERS, R. N. R., *Dorset County Museum, Dorchester.*
Dorset agricultural history.

PERKIN, H. J., *Department of History, Manchester University.*
Land reform movements in nineteenth-century Britain.

POSTAN, Professor MICHAEL, *Peterhouse, Cambridge.*
The agrarian economy in the Middle Ages.

POSTGATE, M. R., *Churchill College, Cambridge.*
The field systems of East Anglia.

POTTER, Professor G. R., *Department of History, Sheffield University.*
The estates of William, Lord Cavendish, later first earl of Devonshire, *c.*1607–12. A transcript of the survey.

POWELL, J. M., *Department of Geography, Liverpool University.*
An economic geography of Montgomeryshire in the nineteenth century.

PRINCE, HUGH, *Department of Geography, University College, London.*
Parkland in England.
A life of Richard Woods of Essex, a late eighteenth-century landscape gardener.

RAEBURN, Professor JOHN R., *Department of Agriculture, Marischal College, Aberdeen.*
Responses of British agriculture to price and cost changes since 1870.

RHYS-RANKIN, Capt. Sir HUGH, *Green Lane, Bryngwyn, via Kington, Herefordshire.*
Welsh cattle droving during the turnpike era from west and central Wales to England.

ROTHWELL, Professor H., *Department of History, Southampton University.*
Topographical work on the estates of St Swithun's Priory, Winchester.

ROWE, JOHN, *School of History, Liverpool University.*
Cornish agricultural history in the nineteenth century.

RUSSELL, REX, 11 *Priestgate, Barton-on-Humber, Lincs.*
Agricultural unionism and the agricultural labourer in nineteenth-century Lincolnshire.

RYDER, M. L., *The University of New England, Armidale, N.S.W., Australia.*
The history of livestock from an examination of the hair and wool remains in ancient skin, leather, and parchment.

SCHOVE, D. J., *St David's College,* 29 *South Eden Park Road, Beckenham, Kent.*
Weather history since A.D. 800, with special reference to manorial accounts and local diaries.

SENIOR, M. W., *Jamaica College, Kingston, British West Indies.*
The development of the land utilization pattern in Assynt parish and in Barra.

SHEPPARD, Miss JUNE A., *Department of Geography, Queen Mary College, London, E.1.*
Rural settlement in the East Riding of Yorkshire.

SHRIMPTON, C., *Trinity Hall, Cambridge.*
Landownership and the Essex farming community, 1780–1830.

SIMPSON, E. S., *Department of Geography, Liverpool University.*
The nineteenth-century agrarian history of the Cheshire dairying region.
Agrarian development in the Wem district of North Shropshire.

SINCLAIR, J. D., *London School of Economics, London, W.C.2.*
Economic and social factors bearing upon changing patterns of land use.

SMEE, Miss D. K., *Department of Geography, Bedford College, London.*
Soil and slope, and ridge and furrow in a Northamptonshire parish.

SMITH, Miss ANN, *Department of Geography, Liverpool University.*
A geographical study of agricultural practice on the Kentish estates of Canterbury Cathedral Priory in the late thirteenth and fourteenth centuries.

SMITH, RALPH, *Department of History, Leeds University.*
Land and society in the West Riding, 1500–50.

STEDMAN, M. B., *Department of Geography, Birmingham University.*
Studies of land use and settlement in the Forest of Feckenham, Worcs.

STURGESS, R. W., *Department of Agricultural Economics, Manchester University.*
The response of agriculture in Staffordshire to price changes in the nineteenth century.

SWALES, T. H., *The Jolly Farmers, Yaxham Road, Dereham, Norfolk.*
The sequestration of monastic estates in Norfolk and its effect on the position of the gentry, 1535–65.

SYLVESTER, Miss DOROTHY, *Department of Geography, Manchester University.*
The rural landscape of the Welsh borderland.
The manor and the Cheshire landscape.

TAVENER, L. E., *Department of Geography, Southampton University.*
Recent agricultural history of Dorset.
Commonlands.

THIRSK, Mrs JOAN, *Department of English Local History, Leicester University.*
The agrarian history of England in the sixteenth century.
The social and economic organization of the woodland areas of England.

THOMAS, DAVID, *Department of Geography, University College, London.*
Agriculture in Wales during the Napoleonic Wars.

THOMAS, DAVID, *Bittons, Ipplepen, near Newton Abbot, Devon.*
Rural transport.

THOMPSON, F. M. L., *Department of History, University College, London.*
Nineteenth-century English landed estates.

THORPE, H., *Department of Geography, Birmingham University.*
Comparative studies of forms and patterns of rural settlement in the British Isles and Europe.
The evolution of settlement and land use in the West Midlands generally, and in Warwickshire in particular.

TITOW, J. Z., *Fitzwilliam House, Cambridge.*
The estates of the Bishops of Winchester in the thirteenth century.

VOLLANS, Miss ELEANOR C., *Department of Geography, Bedford College, London.*
Agriculture and settlement in the Chilterns in the fourteenth century and later periods.

VOSE, E. K., 30 *Avenue Road, Great Malvern, Worcs.*
The administration and economic development of the estates of Worcester priory.

WEBB, A. N., *Lancashire County Record Office, Sessions House, Lancaster Road, Preston, Lancs.*
An edition of the cartulary of the Augustinian priory of Burscough, Lancs., containing charters *c.*1190–1399.

WHITEHAND, J. W. R., *Department of Geography, Reading University.*
Settlement patterns in the Chilterns.

WHITTINGTON, G., *Department of Geography, St Andrew's University.*
A survey of Berkshire commons.

WITNEY, D., *Department of Economics, The Edinburgh and East of Scotland College of Agriculture, Edinburgh.*
The Scottish agricultural economy, 1850–1950.

WOOD, P. D., *Department of Geography, Reading University.*
Strip lynchets.

Book Reviews

A Matter of Time. An archaeological survey of the river gravels of England, prepared by the Royal Commission on Historical Monuments (England). London: Her Majesty's Stationery Office, 1960. 64 pp., frontispiece and 12 plates, 10 maps. 10s. 6d.

This attractive volume is produced with a care for typography and layout and a wealth of fine photographs which make it a pleasure to handle. The horrific glossy red of the cover suits its striking depiction of enormous mechanical gravel diggers clawing great gashes across circular crop-marks which record a four-thousand-years older earth-moving project, and might move to interest and dismay even the casual bookstall browser. At the same time the contents will not only whet but satiate the appetite of the reader more deeply interested in the developing pattern of settlement of the English countryside, with an abundance of tabulation, grid references, bibliography, and clear discussion. The Commission are to be congratulated on combining journalistic enterprise and meticulous scholarship. And it is pleasant that they have departed from their traditional anonymity sufficiently to record that this survey "has been written mainly by H. C. Bowen and R. M. Butler, members of the Commission's staff."

The task of recording all traces of occupation on river gravels, which the Commission shouldered in 1956, was the product of a threat and an opportunity: the threat of total destruction of many of these traces by bigger and better diggers getting more gravel faster; and the opportunity for anticipatory record afforded by the fine oblique photographs taken in increasing numbers from 1942 onwards by Dr J. K. St Joseph, Curator in Aerial Photography in the University of Cambridge, filling out the isolated hints of earlier pioneers.

When O. G. S. Crawford and Cyril Fox began to show that pre-history, and particularly the early history of agricultural settlement, had as much to do with maps as with museums, their distribution maps demonstrated that the earliest farmers, clearing the forests in the third millennium B.C., preferred the well-drained chalk and limestone uplands for cultivation, settlement, stock-raising, and, in the second millennium B.C., for the erection, against the open sky-line, of funerary and religious monuments along what were by then belts of relatively open country. But well-drained river gravels, particularly along the Thames, are also conspicuous on these maps of the distribution of early farming settlement. Recent air and ground surveys, excavations, and botanical studies have changed the emphasis and demonstrated that the gravel terraces of our rivers were even more important than the uplands to early settlers, though their importance has not been realized so soon because on the good agricultural land of the gravels millennia of later ploughing have levelled those barrows, henges, and enclosure boundaries which on the downs might have remained conspicuous to attract the attention of field archaeologists. But the evidence has not yet gone. The ditch elements of these structures remain detectable from the air as crop-marks.

The Commission's maps of crop-mark sites on gravels, and their analysis of these sites into cursuses (Neolithic), circles (Late Neolithic and Bronze Age), enclosures (Early Iron Age to Romano-British mainly), and pit-alignments (assigned by Bowen and Butler to the Dark Ages, though their maps show that these alignments are frequently integral to the Romano-British layout, and never ignore it), demonstrate the continued favour in which all early farmers held these terrace gravels of the Thames, Avon, Severn, Granta, Ouse, Nene, Welland, Soar, and Trent. Here we have the visual demonstration of the wide extent of those clearance activities which Posnansky has shown, by the Middle Bronze Age, to have produced along the middle Trent large grassy areas where

one could be a kilometre or more away from the mixed woodland of the hinterland, so that a little grain cultivation could be combined with sheep grazing on the grassland of the terraces, summer kine pasturage on the flood-plain, pig-keeping along the woodland edge, hunting in the forest, and fishing and fowling along the river and meres. These maps show also that these same river terraces continued to attract all later settlers, not only because the rivers themselves were highways, but because they now led through belts of open country among the still dominant woodlands, corridors for trade and the movement of people and stock, offering well-drained sites for fields and settlements, and not requiring the hard work involved in clearing fresh woodland.

The Appendix listing settlement sites in the Ouse, Trent, and Welland valleys (less previously studied than the Thames) is particularly important for assessing the density of settlement along these terraces, and tracing any increase in this density. But before we can form even a preliminary assessment of the sort of figures involved it is essential to know which of these sites were contemporary with each other. The report recognizes the need for extensive ground survey to settle these problems, and very rightly emphasizes that it is *concentrations* of domestic débris, including datable pottery, which are diagnostic, not thin scatters. But the Appendix gives indications of date for only 19 of the 126 settlements it lists, so that it would appear that the Commission regards this record as an incentive to the amateur field archaeologist, rather than as a challenge to its own resources. I know from personal experience that it is possible for one field worker to survey in the necessary detail over one hundred settlements, nearly all larger and more complex than these on the gravels, in two winter seasons, and I would not therefore have thought it beyond the means of the Commission to act on its own pronouncement that "detailed surveying is *urgently* needed." It is tantalizing to be told (p. 53) that nearly all the sites listed in the Appendix have been examined on the ground by Dr St Joseph, but to find only four datings attributed to him, all published previously. We want to know what was found, even if it was nothing.

Beside this important question of a policy for ground survey other criticisms are minor. This record obviously represents a great bulk of card index work, which has not always been digested and presented in tables and text in a form which is easy to use. Cross-references between the numerous tables and maps are lacking or inconsistent. Grid references are given for sites in the Appendix (Settlement Sites in the Ouse, Trent, and Welland valleys), in the lists of Pit-alignments and Cursuses, but not in the lists of Circles Excavated and of Enclosures Excavated, nor in the text and the Notes on the Plates. Sites are numbered on the maps, but the numbers are not always used in the text. For instance, Maxey 17 is, I deduce, referred to as "a complicated site north-west of Maxey church" on p. 14, "the enclosure at Maxey" on p. 28, and "a small group of overlapping rectangular enclosures" on p. 36, while its grid reference appears only in the Appendix, where a single point reference is given for the large and by no means unitary complex Maxey 17–21, with cross-references to plates but not text. (Of these Plate 6 shows a site 400 yards away to the west.) Nor are sites easily found by number on the maps. Numbers in Maxey parish run up to 111. I have still not found Maxey 54. It happens to be a settlement, and is therefore listed in the Appendix, with grid reference. But the published map is not gridded, so I still cannot find it unless I happen to own a gridded map of the area. Why not simply grid the maps and use grid references throughout? Why are we given detailed references to air photographs by source and number in the table of pit-alignments, but not those for enclosures, circles, and cursuses, nor in the Appendix and list of plates?

These are points of detail, but this is a detailed work, and if the detail is for use, not show, it must be consistent, and usable. May we hope for another edition, incorporating the 1959 photographs which were too late for

this edition, out in late 1960. And may the warm welcome this is receiving encourage the Commission to bring out more slim, cheap volumes on particular *topics*, rather than fat lavish volumes on *everything* in one small area. Field systems on the uplands would fill a fine companion volume.

S. J. HALLAM

R. H. HILTON (ed.), *The Stoneleigh Leger Book*. Dugdale Soc. Publications, XXIV, 1960. lxiv+294 pp. Issued to members. No price stated.

The Cistercians' search for wild and solitary sites concentrated the abbeys of that order where the terrain had deterred any substantial village colonization. The abbeys of the Pennine Dales point to the position of the margin of settlement three generations after Domesday Book, but the northern hills were not the only regions which had failed to attract intensive settlement. In the Midlands, less sodden and less unkind than the North, the Arden carried forest trees long after the oaks south of the Avon had been assarted for the Felden and its nucleated villages. Near the very edge of Arden the abbey of Combe was founded in 1150, and five years later the abbey of Stoneleigh was founded a few miles to the south-west.

Neither of these abbeys was in the utter wilderness; indeed, the Stoneleigh site was a third choice of monks who had found their first choice (Radmore on Cannock Chase) too wild. The Radmore monks had had occasion to visit one of their outlying granges at Radway near Edge Hill and to be entertained at Bordesley Abbey near Redditch *en route*. The kinder south Midlands seduced them: they exchanged lands with Henry II and were established in Arden at Cryfield, halfway between Kenilworth and Coventry, and three miles from Stoneleigh village and the Avon. The villagers of Cryfield were removed to Hurst, a mile further away, and 237 years later the site of Cryfield manor was remembered only as an earthwork: "prout fossatis includitur et est nunc locus nemorosus" (p. 24). The Cryfield site in turn proved unsuitable: it was too near the main road through the woods from Coventry, and the monks' third and final resting-place was alongside the Avon on the edge of Echills Wood, *illum desertum*. Migrations of this kind (as Dr Donkin has recently shown) were quite common, and it is salutary to remember that there were twelfth-century sites too inhospitable even for the Cistercians.

The Cistercians were not the first colonists of the woodland near Stoneleigh nor the only religious house with lands in these woods: Kenilworth Priory had been founded a quarter of a century earlier, and when the Kenilworth cartulary (Harl. MS. 3,650) eventually finds its editor there will be a remarkably thorough documentation of this interesting agrarian frontier. Within Stoneleigh parish, in 1155, were already five nucleated villages and hamlets besides Stoneleigh village itself: at least 104 houses. From these centres the free and near-free tenantry continued to assart and extend the plough, acquiring not only new lands but also a considerable measure of tenurial freedom appropriate to New Men, adventurers, frontiersmen in their little way. In 1305 a section of the Leger Book identifies 113 taxpayers in these six places, Cryfield having been resettled when the monks' final move took place. Colonization was also carried forward from six other centres, the abbey's granges. The Leger Book provides considerable detail of these assarts, with field- and place-names that can sometimes be precisely located. For example, nine 'fields' and four meadows were won from Echills Wood alongside the abbey buildings.

In their gratitude for the agrarian data that arise from records of colonization, historians have usually greeted assarting with approval and given the impression that no one was averse to the *zeitgeist*. But after all, it was the chronicler of Pipewell Abbey who mourned the vanished oaks and the timber assets dissipated for ever, and here in the Leger Book we read in the biography of the fourteenth abbot of Stoneleigh (1278–92): "He brought the waste of Stoneleigh into cultivation contrary

to the wishes of almost all the important men of the whole countryside" (p. 253). After all, the Statute of Merton had admitted that there was no necessary harmony of interest when woods and wastes became fields.

Dr Hilton provides a long introductory essay dealing with the provenance of the Book, some tenurial questions, the process of assarting, and other evidences for the agriculture of this *bocage* region. A clear and sensible map illustrates a final section on the major and minor topography of the area. It was a complex of clearings and woodland, and a mixture of severalty and common arable. Some of the assarted land, especially near the Avon, went to augment the selions of the open fields; there are hundreds of references to selions with their acreages, the average being just under half an acre. In the more wooded north-west quarter of the parish the new land more frequently went into hedges and severalty. Near Canley was a large enclosed waste named *Kannoc* (an echo of the Radmore site, or a coincidence?). Nor was the parish all monastic solitude and peasant toil: since Stoneleigh village did not adjoin the abbey, the abbot was able to have a market and fair there from May 1284.

The situation in the late thirteenth century is illustrated not only from the narrative of the chronicle sections of the Book but also from material brought together in the Introduction by the editor from the unpublished Warwickshire Hundred Roll of 1280; the Introduction also discusses the tallage roll of 1305, and the perambulations and custumals which mingle with the charters and chronicle in the Leger Book; it is a pity that three similar Books for other Stoneleigh estates have disappeared.

Dr Levi Fox's Preface makes it clear that the provenance of this edition is almost as complex as the provenance of the manuscript. Dr Hilton inherited the text as prepared by three previous editors who had either died or passed to other things. The Latin text is set up in the large type and with generous margins appropriate to those pre-war Dugdale Society days. It is broken for the ordinary member's ease of reading only by sporadic cross-headings in English, some of which (but not all) correspond to the original headings of the Leger Book. "More about the Abbey's liberties," runs one cross-head alluringly, although there is nothing at all of a heading in the Latin. Another heading which has a journalistic ring—"Problems of tallage and murder fine"—has no equivalent in the original. Sometimes the Latin headings are paraphrased, sometimes ignored, and once bowdlerized: "Introitus Willelmi bastard in Angliam" becomes "The Norman Invasion."

It may have been one of the editors-designate who invented the date 1249 for a writ of exemption from payment towards the expenses of the knights of the shire in parliament when it should have been 1455 (33 Henry VI, not Henry III), although it is accepted in Dr Hilton's Introduction (p. xi). A typewritten errata sheet was sent to this reviewer (and no doubt to Dugdale Society members) correcting this and other errors, but it had failed to note that 1249 still haunts p. xxvi; it also missed unimportant errors in f.n. 1, pp. xv and xviii. The reference in f.n. 2, p. xxix, should be to vol. 27, p. 115, and not 27–8, p. 113. These blemishes do not detract from a handsomely produced volume and a highly informative and suggestive editorial Introduction. May we hope that the Society will now ask Dr Hilton to give its members the cartularies of Combe and Kenilworth, neighbours and near contemporaries of Stoneleigh Abbey in Arden?

M. W. BERESFORD

Carte Nativorum, edited by C. N. L. Brooke and M. M. Postan for the Northamptonshire Record Society. Oxford University Press, 1960. lxv+262 pp. 42s.

Students of medieval agrarian history have reason to be grateful to the editors of this volume, and the Northamptonshire Record Society, for making available a very remarkable fourteenth-century text. It consists almost entirely of deeds recording transfers of small portions of land between peasants on

manors of the abbey of Peterborough in Northamptonshire, Rutland, Leicestershire, and Lincolnshire. Most of these appear to be of late thirteenth-century date; but the cartulary also includes a number of twelfth-century charters which were copied from an earlier register. There can be little doubt that a careful analysis of this abundant material will produce interesting results, but the work will be arduous and no editors could be expected to regard it as part of their task. It will need caution too, for the interpretation of these documents is not always a simple matter. Only about a dozen, out of more than five hundred deeds, were clearly leases—mostly for one or two lives, but in a minority of cases for years (four, five, or ten). The great bulk of the documents were grants—often to a man and his wife *et heredibus suis*—with a rent reserved to the grantor; and they have every appearance of being grants in perpetuity: even those made to an individual without any mention of his heirs or assigns sometimes provide that two years' rent must be paid *pro relevio*, which, as Professor Brooke remarks, means that the next tenant will pay that in his first year (e.g. Nos. 127, 177, 186, 191); and the absence of this provision from many such deeds is no argument against their perpetuity, for it is often lacking in those which specifically include the grantee's heirs (e.g. Nos. 93, 222, 286). The rents were evidently, in many cases, mere 'recognition rents'; and though such rates as fourpence an acre and twopence an acre appear rather frequently, many of the figures provide a fresh warning against the danger of regarding medieval rents as indicators of economic conditions. For example, two half-acres in the fields of Longthorpe, which were the subject of two thirteenth-century grants, were charged respectively with a rent of a halfpenny and a rent of sixpence (Nos. 104, 105).

Almost all the deeds relate to very small areas, only a negligible number being concerned with more than two or three acres at the most; but some individuals were recipients of several grants and by these means accumulated a dozen acres or so, which for all one can tell may have been additional to land they already held. What one would like to know—but must be very difficult, if not impossible, to ascertain—is the economic position of the grantors. Were many of the transferred plots bits severed from regular holdings of virgate type, perhaps under the stress of poverty? Or were the bulk of the transactions concerned with the tiny holdings of humble cottagers, or with assarts or other additions to the regular holdings of substantial peasants, such as those of which so many examples are to be found on the Glastonbury estates in 1189 and on those of St Paul's Cathedral in 1222? The researcher who endeavours to obtain an answer to these questions will find that the editors have provided him with very welcome help in the way of cross-references, peasant-pedigrees, and an index of names. Professor Postan, moreover, discusses many problems connected with the peasant land-market in an interesting and rather challenging introduction of some thirty pages. This is sometimes rather hard to follow—not least because on point after point he refers his readers (eight times in the text and twice in footnotes) to a subsequent treatment of them, without always making it clear whether the reference is to a later page in the Introduction or to a further publication to be expected from his pen. As regards his conclusions (if I understand him rightly) one can readily agree that the land-market which is conspicuous in the *Carte Nativorum* did not come into being so late as the documentary evidence for its activity. But there is surely ground for thinking that conditions favourable to its development became more prevalent as a result of 'assarting' in the twelfth century—a century which was perhaps in this country "l'âge des grands défrichements." And I think he is much too ready to minimize the factors which made for the maintenance of holdings of virgate or bovate type and to suggest that alienations and sublettings unrecorded in our sources impaired holdings of this kind to such an extent that "the picture of the medieval village as largely made up of virgates and semi-virgates will

have to be greatly modified, if not given up altogether." He makes no allowance for the great difference in economic alienability (in the way of disruption) between tiny cottage holdings, cultivated perhaps by spade labour, and those whose extent was related to the economic use of plough-beasts—nor indeed does he allow for transfers which took the form of a labour-saving exchange of strips. And (though this is a very minor point) it is rather misleading, when arguing from the Chalgrove court rolls which "are available from 1278 onwards," to say that "unfortunately the court rolls of Halesowen and Wakefield are too late to reveal the events of the thirteenth century," for in fact the Halesowen series starts in 1270 and the Wakefield series in 1274.

Professor Postan's contribution is preceded by a careful and detailed account of the manuscript, with a discussion of its relation to other Peterborough registers and an examination of the problem of dating its contents, from the pen of Professor Brooke. It is followed by four Additional Notes. The first of these is a critical account of surveys contained in the Black Book of Peterborough, the dating of which has a close bearing upon the dating of texts in the *Carte Nativorum*, because names often occur in both. But it is hard to see the relevance of the last of these notes in which the reader is invited—in the course of a little more than a page—to take a glance at the Italian *libellus*, the *precaria* of the Merovingian and Carolingian ages, the Polyptique of Irminon, the sense of the term *conductor* in a decree of the Council of Paris of 829, and various views expressed by Hartmann, Brunner, Inama-Sternegg, Caro, Dopsch, Von Below, Sée, Genicot, and Déléage!

Finally, one should note that, though it is the great mass of peasant land-transfers that gives its real importance to the *Carte Nativorum*, there is much of interest in the more miscellaneous documents which occupy some of the last folios of the text. A memorandum on the duties of a beadle (No. 558) deserves special mention.

REGINALD LENNARD

J. M. LAMBERT, J. N. JENNINGS, C. T. SMITH, CHARLES GREEN, and J. N. HUTCHINGSON. *The Making of the Broads: A reconsideration of their origin in the light of new evidence*. Royal Geographical Society Research Series No. 3. John Murray, 1960. viii+154 pp., illus. 25s.

This book tells how the discovery was made that the Norfolk Broads are not natural features of the landscape, as has hitherto been supposed, but the flooded basins of peat excavations carried out during the Middle Ages.

The discovery was the outcome of a remarkable co-operative effort. It was the botanist (Dr J. M. Lambert) and the geologist (Mr J. N. Jennings) who first hit upon the true interpretation of the facts they had so painstakingly collected (over 2,000 borings were put down). They found that the edges of the Broads were composed of sheer 'cliffs' of peat, that the floors were flat, that baulks of solid peat still remained here and there (often under water) and in one or two places these stretched almost from one side to another. These and many other observations pointed to only one conclusion.

At this point the historian (Mr C. T. Smith) was called in. He found plenty of supporting evidence. Contemporary records proved that peat was being dug on a large scale during the thirteenth and fourteenth centuries, and on the basis of the rate of extraction during that period it was perfectly feasible for the Broads to have been excavated by hand. Moreover the historical evidence enabled the story to be taken a stage further. Mr Smith was able to show that from 1300 onwards the peat workings were becoming more profitable as fisheries than as turbaries and he suggests that the gradual flooding of the peat workings dates from about this time.

It was left to the archaeologist (Mr Charles Green) and the civil engineer (Mr J. N. Hutchinson) to establish the full significance of this flooding. From a study of the extensive excavations for the power station at South Denes, Yarmouth, they were able to show that the level of the land during the Middle Ages was some 13 feet higher than it is today. This

was the missing piece that had to be found to make the jigsaw fit together. It has long been known that the eastern parts of England are gradually subsiding, but at the present rate of subsidence the land level in the thirteenth century would have been only about 3½ feet higher than it is today. The discovery that the rate of subsidence was greater during the Middle Ages than it is today is of vital significance not only for a proper interpretation of the nature of the Broads but for an understanding of the history of all the coastal districts of eastern England.

Those who are concerned to throw more light on the history of other coastal areas will be disappointed that Mr Green does not develop more fully the significance of his discoveries in relation to what he calls the "Upper Clay Marine Transgression." There are so many theories current about this earth movement (it is thought to have taken place in the second century A.D. and to have been a sudden catastrophic fall in land level) that reliable evidence of when and how it occurred would be invaluable. Perhaps Mr Green and his colleagues will now turn their attention to the solution of this problem.

BASIL E. CRACKNELL

F. H. FENTON (ed.) and W. McB. MARCHAM (transl.), *Court Rolls of the Manor of Tottenham, 1510–31* [Manor of Tottenham Series, VI], Borough of Tottenham, Libraries and Museum, 1960. 290 pp. 42s.; *Court Rolls of the Manor of Tottenham, 1547–58* [Manor of Tottenham Series, VIII], Borough of Tottenham, Libraries and Museum, 1959. 176 pp. 40s.

The Tottenham Borough Libraries and Museum have decided to make more readily available to the public a magnificent collection of court rolls, covering, with only a few gaps, the period 1318 to 1732, together with other manorial records relating to the manor of Tottenham. The two volumes under review consist of an English translation of some of the sixteenth-century rolls with a full index. Another volume, published previously, covered the years 2 Edw. II to 1 Ric. II, but is at present out of print. It is to be hoped that this commendable enterprise will receive enough support to pay its way and reach completion. For here is a splendid opportunity to examine in detail changes in the composition of holdings and in the structure of society, in a district where the field system defied satisfactory explanation by H. L. Gray, where much enclosure had taken place by the sixteenth century (though, in Tottenham, common meadows evidently remained), and where London merchants, ever alert to snatch a good pennyworth, were conspicuous by the Tudor period.

These rolls prompt many reflections which deserve fuller investigation. What social tensions, for example, resulted from the obvious division of this community into two camps: the resident natives, on the one hand, faithful attenders at the court, without much interest in the buying and selling of land; and those restless, greedy birds of passage, the citizens of London, who bought bits of land here and there, rarely attended the court, and were frequently presented for allowing the ditches on their land to get choked with rubbish? What effect had the different methods of transferring customary land upon the composition of holdings? The custom of inheritance in the manor was Borough English, and a number of younger sons appear in court to take seisin of their fathers' holdings. But not all customary land was passed on in this way. Some was partitioned before death among sons, some was conveyed to seeming strangers, and some was bequeathed by will. By this last method again, holdings were divided among many individuals, without sign of protest from the manorial lord. The consequences of these different procedures for transferring customary land merit closer study, for some knowledge of their relative importance over three hundred years could add much to our understanding of resulting field patterns and farming usages. Finally, what can one learn from these rolls of the unspoken social assumptions which made the routine of manorial husbandry work so remarkably smoothly? Clearly, the rolls afford

the best approach to this difficult subject. Through the court, law and order in the daily round of life was maintained, and the villagers, at once more submissive to the discipline of the community than their modern counterparts and more unruly, were kept at peace with one another. Stung to anger, any one was liable to draw his dagger and spill blood. Yet people submitted obediently to their neighbours' sharp judgements upon disorderly behaviour. The man who housed a disreputable woman of evil conversation was peremptorily fined and ordered to send her packing. The women who gossiped maliciously about their neighbours were fined and ordered to hold their tongues in future. How serious, one wonders, was the provocation before the court took cognizance of such offences? And how much persuasion was necessary before Robert Combes and William Palley, quarrelling about some damage done to Combes's orchard, accepted the arbitration of the court and agreed "that the one shall take the other by the hand, and after, drink one to another, and be in charity." In a parish where land was much intermingled, even though it was enclosed, and people were brought constantly together in their daily work, where convivial meetings were numerous enough to warrant the existence of nine alehouses in the manor, the community was much more closely integrated than the modern village. We who are brought up in a more individualist society find all the consequences of this fact difficult to grasp. But the manorial court ensured that the task of keeping law and order was more of a personal responsibility than it is today, and this presumably made it easier to accept the discipline imposed by one's neighbours.

JOAN THIRSK

GEORGE H. GREEN (tutor), *Historical Account of the Ancient Kings Mills (Castle Donington, Leicestershire)*, W.E.A. History Group, Castle Donington, 1960. 64 pp. 4s.

This booklet represents the research of the Castle Donington W.E.A. group into the history of the watermills and the hamlet, Milnethorpe, which lie alongside the River Trent on the western edge of the parish. It traces the changing use of the mills, which ground corn, fulled cloth, made paper, and finally ground plaster, flint, and grist, discusses their military importance and the trade that passed through this small inland port. It includes a most attractive description of the river scenery at Kings Mills and the overhead chain bridge which crosses the path down to the river, which will make every one who finds himself on the Birmingham to Nottingham road pause to visit the place for himself. This pamphlet, which promises to be the first of a series on the parish, is well produced, well illustrated, and well written.

JOAN THIRSK

MILDRED CAMPBELL, *The English Yeoman under Elizabeth and the Early Stuarts*. Merlin Press (reprint), 1960. viii+456 pp. 42s.

Professor Campbell's well-known account of the English yeoman, first published in 1942 and now reprinted, is one of the latest of important works on social and economic history to become available again.

On a re-reading one is reminded again of the flexibility of the term yeoman—really a mark of status—and of the shadowy lines dividing the ranks of rural society. The "backbone of the English nation" comprised not only freeholders and copyholders but also the larger tenant-farmers; and the yeoman, although primarily concerned with agriculture, often engaged in various trades and crafts and apprenticed their sons to them. Their incomes ranged from £40 or £50 to several hundreds a year, so that there were great differences between the poorer and the "better sort" of yeomen. At the bottom they were scarcely distinguishable from the small tenants and husbandmen, and at the top they might command more wealth than the minor gentry with whom they often intermarried. There were no great barriers to social mobility, and owing to marriage and the entry of sons into the professions it was common for a yeoman to have a brother or son styled

gentleman. The yeomen, in fact, can only be defined as "a substantial rural middle class whose chief concern was with the land."

Although the author draws her examples from every corner of England, the regional differences between, say, the yeomen of Kent and those of the Midlands or the south-west, do not appear at all clearly. She is concerned to trace the characteristics of a whole social group, and as a consequence the more fine, but important, local distinctions are neglected. In the light of more recent writing on this period the picture, too, seems very much a static one. The impact of the price revolution and other great economic developments receive only casual mention. There is, however, plenty of evidence in her chapters that the yeomen seized the opportunities around them: they formed an advancing "group of ambitious, aggressive, small capitalists"—acquiring land, improving their conditions of tenure, developing more efficient husbandry, and enclosing.

The book really constitutes a readable and well-rounded social history, in which economic and technical changes are subsidiary to the delineation of social characteristics, community functions, and a way of life. There are, however, interesting brief accounts of methods of cultivation and even of that much-neglected subject, agricultural marketing. In its wide use of sources this book will ever be a model, and the bibliography remains immensely valuable.

G. E. MINGAY

M. W. BARLEY, *The English Farmhouse and Cottage*. Routledge and Kegan Paul, 1961. xxii+298 pp., illus. 55s.

This book is the most important study that has yet appeared on the English farmhouse and cottage. The fact that strikes the reader at once is that there are many plans and sections (75 of them) and not just the usual collection of glossy photographs. For the first time the country has been taken area by area, period by period, and representative plans and photographs are given for each, so that it is at last possible to begin to analyse the regional variations of farmhouses and cottages from the sixteenth to the eighteenth centuries.

Mr Barley starts with a chapter in which he attempts to set the medieval stage as a background to later developments. It is this part which is weakest, for not only does it have little bearing on the main theme but there are many statements which cannot be accepted. Surely the first-floor hall being set on fire in the Bayeux tapestry can in no sense of the term be called a peasant house, and the view that the Saxons all lived in small pit huts has not been seriously held for some years. In fact, much of the discussion on various types of hall has little bearing on the theme. The types of medieval peasant house will be worked out from excavations on deserted medieval villages. Though it is only just now possible to begin to draw conclusions from these, it is already clear that they are in quite a different tradition.

Mr Barley, however, comes into his own in his excellent chapter on early Tudor homes, which sets the stage for his description, in Part II, of the great rebuilding which took place between 1580 and 1630. Probate inventories, and other documentary evidence, are skilfully blended with the description of surviving houses to show the great changes during Tudor times which produced an increase in the number of rooms from the usual two–three roomed house, an increase which was most marked in south-east England and was progressively less perceptible nearer to the highland zone. In Part III the pace of new building is shown to slacken during the second quarter of the seventeenth century. In this period the increase in the number of rooms is more a question of convenience than comfort, often taking the form of new service or store rooms.

In Part IV the second great building period, which followed the Restoration in 1660, is described. In Part V Mr Barley places the death of vernacular architecture in the early eighteenth century, when there is less rebuilding than at any time since 1550. This provides a useful endpoint for his most valuable and lucid survey, since the enclosures of

the second half of the century start a major new phase of individual farmhouse building, which makes an entirely different subject.

It is remarkable that there is no trace in the lowland zone, in Tudor times, of the long house which, as excavation is now beginning to show, was the typical house type over the whole country in medieval times. The evidence of aerial photography suggests that it was between about 1525 and 1550 that the farm as we know it today, with its living house and separate outbuildings for animals and storage, was developed. For example, at Wharram Percy in Yorkshire, which was deserted between 1510 and 1520, all the houses are cots or long houses, while at Towthorpe, only a mile away in the same parish, which was deserted at the end of the sixteenth century, most of the houses have outbuildings. It does seem, therefore, that at the time of the great rebuilding, or just before, a fundamental change took place in the lowland zone which led to the abandonment of the long house. In the highland zone, on the other hand, the long house survived, though it was adapted for greater comfort from the middle of the sixteenth century.

The agricultural historian would like to know the significance of all this from the economic point of view. Evidence is now rapidly accumulating both from the medieval and post-medieval periods which may make it possible during the next five or ten years to give the answer. The three-roomed house is now clearly shown to be typical for anyone of villein status in the medieval period. In by far the largest proportion of these buildings the animals were kept in the third room, though there is evidence that it was sometimes used for storage. It is quite clear that the long house is not confined to pastoral areas. Even in the highland zone this was shown by Mr E. M. Jope's discovery of a corn-drying kiln in a village of long houses at Great Beere, Devon. The presence of many hundreds of long houses on deserted village sites, which were primarily agricultural, confirms this fact.

It is such a joy to have a book with so many plans that it is a pity they are not all reproduced at the same scale and that some have no scale at all. It is also unfortunate that although standardization in plans is called for, several different conventions have been used which will confuse the reader. Figure 17 purports to show a typical series of Dartmoor long houses but there is something wrong with each one. In A and C Mr Barley has followed Hansford Worth, but the drain at Colliehole has now unfortunately been covered up and people wishing to see the now fast diminishing examples of these would be disappointed by a visit. Plan C is not of Shilston as the shippen here is on the right, not on the left, of the cross passage. In plan B of Higher Tor (not just Tor) there is surely a cross-passage as a blocked-up doorway is clearly visible; it should therefore be stippled on the plan. Surely house D at Lower Tor was not built in 1707 but was originally a type C house which was converted into type D in the early eighteenth century. The caution of not dating a house by its datestone is not followed in this example. There is also a serious confusion here in the naming of this farm, for Plate XIXB is not named, but in the caption index it is called Higher Tor (Plan B) while in point of fact it is clearly Lower Tor (Plan D). There is also an inconsistency in the references to the Royal Commission on Historical Monuments. R.C.H.M. is clearly given in the list of abbreviations but on pages 8, 16, 115, 173, 238, and 248, H.M.C. is given, which will be bewildering to the uninitiated.

I hope however that these criticisms will not prevent people from buying and reading the book, which is excellently produced and illustrated, and is a credit to the publishers at a time when glossy books of photographs are still being produced with no plans at all. Until Mr Barley's book was published it was quite impossible to draw any conclusions about farmhouse and cottage plans without a considerable search for the scattered articles which have appeared in different periodicals. Here we have a pioneer work that will henceforth be a standard work of reference for students in this much neglected subject. Mr

Barley has shown the way, and it is to be hoped that it will be followed by further books on different regions, making greater use of archaeological information which has been so much ignored in the past.

J. G. HURST

MAUREEN WEINSTOCK, *More Dorset Studies*. Longmans (Dorchester) Ltd, n.d. ii+120 pp., maps. 8s. 6d.

More Dorset Studies, like the author's earlier *Studies in Dorset History* (1953), is a collection of essays on local topics. This time we have Weymouth and Melcombe Regis in Tudor and early Stuart times (three essays), Dorset fire relief in the seventeenth and eighteenth centuries, the Beaminster–Bridport turnpike, Simon Pretor of Sherborne (three essays), and parliamentary elections in the eighteenth and early nineteenth centuries in Weymouth and Melcombe Regis. Except for Pretor's activities as a late eighteenth–early nineteenth-century landlord, where details of rents, crops, tithes, and the cost of enclosure are given (pp. 94–100), there is hardly anything in the book directly relevant to agricultural history.

Historians of national affairs will sometimes find the essays, the first three in particular, a useful quarry. But Dorset readers will benefit more from them. Those who already know some local history will find fascinating new material here on subjects as diverse as fires at Beaminster and an eighteenth-century grocer's stock. Those who do not, have a detailed introduction, full of human touches, to aspects of their local social history.

Such essays, often written from a small number of documents and very readable, could well be imitated elsewhere. If they are, details of presentation will need to be more carefully considered: references in the text like E.179 and Inspeximus do not attract the general reader, and titles and footnotes need to be clearer, proofs more carefully checked, and the use of capital letters controlled. Most important of all, a Table of Contents, an index, and the date of publication (all lacking from the present volume) must never be omitted.

ROBERT DOUCH

G. H. GARRAD, *A Survey of the Agriculture of Kent*. (County Agricultural Surveys, No. 1.) Royal Agric. Soc. of England, 35 Belgrave Square, S.W.1. 1954. iv+232 pp., illus. 25s.

R. H. B. JESSE, *A Survey of the Agriculture of Sussex*. (No. 2.) 1960. viii+140 pp. illus. 25s.

These two surveys are amplifications and continuations of the valuable Land Utilisation Survey carried out over twenty years ago. Both are written by men who spent forty years in the counties as agricultural organizers and saw the profound and swift revolution from the traditional horse to mechanical power, the changes brought about by two wars, and the immense development of scientific knowledge. They knew two worlds.

The foundation of the Kent survey is the authoritative division of the county into seven broad farming regions based on the geological formations. Five (mainly geographical) special areas, within the seven regions, are also selected for wise and simple treatment. The 4th of June 1950 Ministry of Agriculture returns for large 'samples' (mostly over 20,000 acres) of named representative parishes in each region or area are tabulated into (*a*) 22 crops by acreage with percentages, (*b*) 6 types of livestock by number and per 100 acres, (*c*) labour employed by numbers and per 100 acres. Each division has significant and lucid comment, geological and agricultural, by a man steeped in his subject. Insignificant areas (under 5 per cent of the agricultural land), such as the Gault and Upper Greensand, are briefly treated without tables, and exceptional areas are noted. The ordering of a complex position is most skilfully done, for Kent probably has more diverse farming than any county.

This excellent plan could be the model for all future surveys and indeed for a farming region plan covering Britain and applicable for at least the last four centuries. The success of the plan is due to the author's use of com-

prehensible and defined units, the farming region and the parish, to which facts past, present, and future can be accurately related. It provides the vital link with personal experience which transforms history into something more than meaningless fantasy. With such method the confused mass of information, frequently based on individual whim, becomes manageable and sensible. Valuable comparisons, and where no evidence survives, useful analogies are possible.

The rest of the book shows the same orderly thinking and the eye for significant detail; it has a full bibliography of 140 items, which are related by numbers to the text. The appendices are excellent and provide abundant tabulated and graphed information, as well as distribution maps, mainly, apart from hops, covering the twentieth century. There is a map of all parishes at 1 inch to 4 miles which, by using Mr Garrad's 136 representative parishes (covering 43 per cent of the agricultural land), could be coloured to show the broad farming regions.

Students of Kent agrarian history, particularly those with no practical experience, will find this book an essential tool, and if they are using farm inventories, a definitive selection of parishes. It is difficult to see how it could be improved, except by modifying an idea in the Sussex survey and including a description of a typical, not model, named, present-day farm in each region.

In the Sussex survey Mr Jesse had the disadvantage of knowing his own East Sussex intimately and West Sussex less well. Apart from the marshes peculiar to East Sussex and the coastal plain peculiar to West Sussex the county has the same broad farming regions and the administrative split of seventy years ago should have been ignored.

Mr Jesse's chapter-headings are superficially similar to those of Kent, but unhappily the balance and clarity are quite different. Kent gives 30 per cent of its pages to geological and agricultural comment on closely defined (by means of 'samples' of named parishes) farming regions and special areas; Sussex gives only 15 per cent to comment on "farming on the different geological formations," with no clear guide to the principal farming regions by named parishes. There is no bibliography, the author having relied "almost entirely on his own experience," and no appendices or parish map.

It is unfortunate that Mr Jesse did not follow the inspired lead given by the Kent survey six years earlier.

G. H. KENYON

H. T. WILLIAMS (ed.), *Principles for Agricultural Policy*. Oxford University Press, 1960. xiv+318 pp. 18s.

The declared purpose of this book is not to advocate a policy, which is the duty of government, but to suggest principles on which long-term policy might be based: such principles to be derived from a study of economic and social history, agricultural science and technique, nutrition, and military strategy. To this end, the book is divided into several Parts, of which the first—a historical review of the last hundred years—is of chief interest to readers of this journal. This in turn is subdivided into eight chapters, which set out soundly and lucidly, albeit briefly, the main trends and events.

Most of the material is well known to readers of agricultural history, but we are reminded of several facts and figures too often forgotten, and which need to be recalled today, when the future of home farming is once more at stake. In 1840 we produced almost all our own food; in 1940 barely 40 per cent. 1850–75 was the 'golden age' of agriculture, as it was of industry: a period of tremendous advance in technique and in the output and value of farms. Yet, despite this and the replacement of 300,000 workers by machines, farm wages hardly advanced at all. No wonder there were strikes and that the farmers got little sympathy from the workers in the really bad times that followed. The depression, beginning in the late 1870's, changed the general pattern from tillage to livestock, in particular to dairy cattle, which had become the sheet-anchor of British farming by the early 1900's. The position is the same today, but the per-

formance of the dairy cow is now far higher: likewise the production and quality of grass, where husbandry has undergone a real revolution. It was extraordinary how long Britain persisted with Free Trade, and this at the expense of soil and agriculture, the only real primary asset beside coal. Even the protective measures of the 1930's were piecemeal—subsidies for sugar beet and wheat; the marketing of milk, hops, potatoes, and bacon pigs; a few grants to aid better farm practice—all patchwork. Would anything radical have ever been done, one wonders, had it not been for the war? It was perhaps fortunate for farmers that war-time measures had to be continued into the peace, so that high productivity in agriculture could help meet the external balance of payments. It ensures a precedent of government assistance, which will be difficult to reverse, even now when a period of freer trade and food surpluses—at any rate in the West —seems to have returned.

The conclusions reached by the editor at the end of the first Part of the book are sound, though hardly striking. Perhaps they are too familiar? None the less they should be imprinted on the minds of the townsmen who govern us. They are that, in terms of history, farming has moved from a pattern of crops for human consumption to livestock and livestock products, a feat of remarkable adaptation in the face of years of neglect and—I would add—of the irresponsible exploitation of land; that farmers have shown a high degree of co-operation, are able to assimilate new knowledge and techniques quickly, and are willing to venture despite restricted resources; finally that the State must continue to intervene to iron out the price fluctuations of international trade, and by means of a reasonable expenditure of public money and advice to help maintain agriculture in efficiency and heart.

Those who read the first Part of this book will wish at any rate to glance at the remaining non-historical Parts, where they will find statements of similar caution and balance. In sum, the book renders a useful service in presenting a careful analysis of the relevant material, and in summarizing the conclusions. It is therefore useful more as a reference book than as a guide to new thinking. The editor is no less to be congratulated on that account. He must have had a particularly difficult task. Quite apart from the complexity of the subject which he has had to clarify and condense, he has not overloaded the text with technical jargon, and has supplied some excellent tables and graphs. The result, for a specialist work, is comparatively easy reading. But that is not all. As Sir Frank Engledow explains in the Foreword, Mr Williams was called in at a late stage to absorb and refashion the research of an earlier investigator, and bring the book into line with the recent phenomenon of market plenty. He has my sympathy and felicitations.

VICTOR BONHAM-CARTER

Mechanization in Agriculture, ed. J. L. Meij. North Holland Publishing Company, 1960. 380 pp. 55s.

This is a symposium with contributions by ten writers. Five are from this country, four from the Netherlands, and one from the U.S.A. They deal with agricultural mechanization from many angles: conditions in Europe, conditions in the U.S.A., capital requirements, the problems of management and marketing which mechanization raises, its place on the small farm, and the difference between mechanizing in agriculture and industry. There is also a chapter (Ch. I) which discusses the influence of economic conditions on the development of agricultural tools and machines in history. This is written by Professor Slicher van Bath of Wageningen. It is the only chapter which commends the book to an agricultural historian *qua* historian, for the other contributions necessarily pay little attention to history. But there is so much relevant material in van Bath's chapter that the book deserves attention by historians if only for this contribution.

There is a quite widely held idea that agriculture scarcely changed from time immemorial until the latter part of the nineteenth century. Consequently economic con-

ditions are often thought to have had little or no effect on the development of agricultural techniques. Professor van Bath's thesis is that economic forces, especially the fluctuations in the prices of corn, dairy produce, meat, and wool, have influenced both agricultural production in general and, more particularly in the present context, the development of agricultural tools. "More tools and machines are invented and applied in periods of high prices for farm produce than in periods of low prices;" and when the price ratio of corn to dairy produce is favourable to corn more developments are likely in arable implements, and *vice versa*. (This is an interesting commentary on the adage: "necessity is the mother of invention.")

Professor van Bath places more emphasis on the cyclical periods in agricultural expansion and contraction before industrialization than is usual amongst British agricultural historians, and the connection which he shows existed between these cycles and the development of farm tools and implements is particularly interesting. Thus, the expansion between 1050 and the end of the thirteenth century, "*l'âge des grands défrichements*," would not have been possible without the use of horses and the heavy wheeled plough with a mould-board. But the use of horses depended on the padded horse collar and shafts, both of which were first used at this time, and made it possible to displace the ox with the horse. Similarly, mould-boards were probably unknown before the eleventh century.

During the depression of the fourteenth century corn lost ground to stock farming, and the few improvements that were introduced into farm implements had to do with dairy equipment and with what would save labour, for throughout the period the ratio of wages to corn prices was high.

In the sixteenth century grain prices rose again and improvements were made in grain-growing implements. But although further inventions were made in the seventeenth century, the depression in farming, which extended almost to the middle of the eighteenth, delayed their introduction into farming practice. Conditions changed again in the latter part of the eighteenth century, when industrialization, by providing an alternative outlet for labour, re-emphasized the need for labour-saving machinery, while the war and the growing population ensured prices for farm produce which made it possible for farmers to afford them. Moreover, with the improvements in transport and in the ways of disseminating information, the time-lag between invention and application was reduced.

By 1770 one European writer had stated that agriculture could not be improved further "with complicated instruments." Yet the growth of mechanization in the nineteenth century was so great that in 1855 complaints were made in Holland that "The poetry of agriculture is lost, it becomes a factory industry." Even in the New World similar laments were made, but in regions where machines could be employed, famines had become almost unknown for the first time in history.

It is unfortunate that printing mistakes throughout the book are so numerous. Although it is written in English, one suspects that English was not the proof-readers' mother tongue. At any rate, to see "Switzerland" with an initial "Z" looks decidedly un-English.

W. HARWOOD LONG

R. D. COLLISON BLACK, *Economic Thought and the Irish Question*. viii+300 pp. Cambridge University Press, 1960. 37s. 6d.

The Irish question of the nineteenth century had two aspects. The political one is well known and indeed has come to be considered something of a bore in this country. The economic and social aspect is less well known and deserves to be studied because of its considerable historical interest and importance in the general sense. The surging population growth before the Famine of 1846–7 and the unplanned reduction which followed at once spring to mind as an example. Again, without going into the question whether Ireland under the Union stood in a 'colonial' relation

to England, it is clear that Irish history provides early examples of the problem of underdevelopment as we understand it today. In fact, the importance of a knowledge of Irish economic and social history might well be argued as a corollary to the necessity of studying the Industrial Revolution in Britain.

This book, although primarily written from the standpoint of the historian of economic thought, is an important contribution to Irish economic history. The point seems to be worth stressing, for there is a danger that the economist may grow impatient with the unfamiliar facts which to his mind clog the discussion of the relation between theory and policy, while the historian on the other hand may stumble over the tough abstractions which seem to him to hinder the narrative. Dr Black has drawn on an impressive array of sources, both manuscript and printed, in the preparation of this work. He has used the papers of the public figures of the day which are available in British and Irish archives, records of the Treasury, Home Office, and Colonial Office, and also had access to collections which have migrated across the Atlantic. To one who knows the material, his labours in the mass of blue-books relating to Irish problems are deserving of praise. In addition to all this, he had to deal with a vast pamphlet literature.

The spectacle of Irish poverty in the first half of the nineteenth century has always been depressing enough, and the picture presented in this book of the inability of those in charge of affairs and their advisers to grasp the problems involved or to provide any remedy makes it worse. Dr Black does not go in much for judgement, but he implies that security of tenure and self-government might have produced better results. Certainly the land system was at the root of the trouble, but in a self-governing Ireland it is hard to see how the problem could have been solved by other than revolutionary means. Security of tenure, too, would have been likely to aggravate rather than cure the population problem in the short run, at least before the Famine. It is always well to remember that Ireland was created poor and long held down in poverty, and that it will be no easy task for her people to achieve a modest prosperity.

E. R. R. GREEN

A. N. DUCKHAM, *The Fabric of Farming*. Chatto and Windus, 1958. 224 pp., illus. 15s.

This is a day when few can see the whole technological wood for the flourishing trees, no less in agriculture than in any other scientifically based industry. Therefore any man who attempts to present a picture of the wood, as well as of its constituent timbers, earns our gratitude for the attempt. Professor Duckham has used a different metaphor, that of the whole cloth and its warp and woof and thread colours, to hang his text upon, whereof the subject is the integration of all the elements of farming, in its four dimensions, into the national agricultural industry.

This needs to be attempted periodically. I have tried to recall the last man who succeeded in the synthesis: and I think it was probably Caird, one hundred and ten years ago (although everyone will have his pet candidate for the honour). I do not think that Duckham has succeeded, although his is a most meritorious near-miss.

What is it that he has tried to do? To show how man harnesses the forces of nature to his agricultural purposes; to show how, in the historical development of farming, the "natural food cycle" becomes increasingly artificial; to pursue this theme biogeographically; and to extrapolate into the future the picture so built up. That aim is admirable; more, vital. In pursuing it, Duckham seems to me to have lingered too long over the perfections of the techniques of individual trees to leave himself the time, or his readers the patience, to seize the significance of the technological wood. He moves from the delightful chapter-heading texts:

"The town was Anson City, old Jones's
county seat,
Where they raised Polled Angus cattle,
and waving whiskered wheat,"

to such stultifying textbookese as "the vitamin B complex and vitamin C are associated with cellular respiration," and back again to such startlingly novel truths as "even though he may not fully understand what he is doing, man has discovered and daily uses ways and means of raising the biological efficiency of the soil."

That, I think, is the fault. Duckham runs us up and down the stairs, between the starlit roof and the fungi in the cellar, too fast and too often, so that we (and he?) are breathless and uncomprehending.

But the idea of this book, and some part of its execution, are so good that Professor Duckham should pursue it in "the series of books that he is writing" (*vide* the blurb). He is one of the very few men today with the imagination, the breadth of knowledge, and the mental catholicism that are needed for the task. This may seem an impertinent comment for an agricultural journalist to make to the Professor of Agriculture in the University of Reading. But it is precisely for the likes of me that the likes of him write this sort of book.

R. TROW-SMITH

A. R. STEDMAN, *Marlborough and the Upper Kennet Country*. Butler & Tanner Ltd, 1960. x+398 pp., illustrated. 42s.

Mr Stedman has amply succeeded in his aim of superseding Waylen's century-old history of Marlborough, and has provided a rich vein for the local reader to quarry. The proliferation of names and dates of solely local significance may, on the other hand, make some passages tedious for the general reader and must have contributed to the mistakes noted on the two *errata* sheets which come with the book. One slip which has still escaped notice is the indexing of William Cobbett as Richard. It is good to learn that a fully referenced copy of this very detailed work will be deposited in the library of the Wiltshire Archaeological Society.

The book is at its best on the intricate and well-documented educational history of the town, with which Mr Stedman dealt in his earlier history of Marlborough Grammar School. The remainder of the work leans heavily on administrative, political, and religious history, and agricultural and rural matters are passed over rather more lightly than might be anticipated in a regional study. There is little sign that the author has looked hard at the landscape of his district, other than at major architectural features, or read much of the last decade's refreshingly down-to-earth Local History. The map of the loosely defined Marlborough and upper Kennet district is inelegant: must reviewers continue to beg for stencils to be used?

There are some inaccuracies. The site of Aldbourne Chase (p. 4), contrary to the author's claim, is still distinguishable from the ploughland by a thin scatter of scrub oaks. Water meadows (p. 5) can be, and not so far away are, ditched by mechanical digger. The mention of floated meadows at Great Bedwyn in the middle ages (p. 90) reads like an anachronism, although it would be surprising if flooding were not in some way controlled during at least the thirteenth century, and Mr J. E. G. Sutton has found a reference in the *Cartulary of Ramsey Abbey* (I, p. 332) to meadows called Dammede and more significantly Flotgates at Houghton, Hunts., in 1252, which moreover could be mown every year whereas most others could be mown only every second year. It is difficult to believe (p. 241) that the supply of straw in the chalklands really proved inadequate for the straw-plaiting industry of Aldbourne and elsewhere in the nineteenth century, and (p. 261) it would be interesting to learn what mechanical improvements in farming Mr Stedman believes were initiated by the parliamentary enclosures of the eighteenth century.

E. L. JONES

ELIZABETH CRITTALL (ed.), *A History of Wiltshire*. Vol. IV. Oxford University Press, 1959. xx+486 pp., illustrated. £7 7s.

After six pages of introductory synthesis by Dr W. G. Hoskins, this volume settles down to treat *in extenso* of agriculture, the woollen and textile industries, engineering and rail-

way works, other industries, roads, canals, railways, sport, spas and mineral springs, freemasonry, and royal forests. Professor M. W. Beresford contributes very full analyses of the quotas for the subsidies of 1334, 1377, and 1428; and there are tables of population from 1801 to 1951.

Agriculture is handled chronologically by four writers: the medieval period by Richenda Scott, 1500–1793 by E. Kerridge, 1793–1870 by R. Molland, 1870 onwards by F. M. L. Thompson. It would have been hardly possible to find a better qualified team, regarded individually, but the team-work as such might in some respects have benefited from a stricter co-ordination. For example, Dr Kerridge begins the second article with an analysis of the six farming regions comprehended in sixteenth-century Wiltshire. It is unlikely that these divisions appeared suddenly in 1500, but there is no hint of regional characteristics in the earlier chapter.

For a volume of this size, containing such a wealth of detailed scholarship, and handsomely illustrated, the price of seven guineas cannot be called unreasonable. Many students of particular subjects will however regret that the present publishers have not seen fit to revive the practice of V. C. H. in earlier days, which made it possible for some of the main articles to be purchased separately in paper covers. To say nothing of the articles on agriculture, there would surely be a wide sale for Professor Carus-Wilson on the woollen industry before 1550 and Miss Mann on textile industries since that date: two outstanding contributions in an altogether admirable volume.

H. P. R. FINBERG

CLARK C. SPENCE, *God Speed the Plow: the coming of steam cultivation to Great Britain.* University of Illinois Press, Urbana, 1960. 184 pp. illus. $4·75.

"Give me a steam engine on a frosty morning with fat dripping off the cylinder and sizzling down the side of the boiler. Why, it smells like bacon and eggs," a one-time steam ploughman is reported to have said recently. It illustrates well the romantic aura which bedevilled steam ploughing during the comparatively short time that it served British agriculture. The men who worked the engines loved them with tender care; the farmers who used them spoke enthusiastically, almost rapturously, of their work, and the inventors and manufacturers approached their task with fanatical zeal. Yet it is a curious fact that steam cultivation first became of consequence in the 1850's and had declined to comparative unimportance by World War I, though it is true that there are still a handful of sets working today.

Professor Spence in his book, which won the American Agricultural History Society Award for 1959, has dealt faithfully and rationally with the subject. He has resisted the substantial temptation to be carried away by what more than one writer has termed "the halcyon days of steam," and he is left unmoved by the sizzling of the fat on the cylinder. It is the first serious study of the subject to appear and he deserves congratulations on a well-written and important book. His technical material is particularly complete and gives a very clear picture of the development of steam cultivating equipment from the early pioneer days until the end of the nineteenth century. He dispels the common belief that John Fowler invented it, discusses the importance of direct cultivation and its decline, and explains the many cable systems that found vogue until we are fully familiar with such standard steam terminology as "double engine, roundabout and headland opposite." From a painstaking search of journals and the press he gives very satisfactory résumés of the many controversies which raged about types of tackle, their effect on the soil, and the costs of the various systems.

It would, though, have been of interest to know more about the way in which these enormous machines were moved about the country. Those who have worked with steam ploughs know that, even today, it is necessary to give the railways advance notice before driving the engines over a level crossing, and

there must have been few roads capable of taking monsters weighing up to twenty tons without damage. How, for example, was John Heathcote's famous engine of 1836 moved from Bolton-le-Moors in Lancashire to Lochar Moss near Dumfries, into which it finally sank and remained, "bound to the soil by some sort of mortgage"?

The main question which Professor Spence, though he discusses it, never answers convincingly is why steam ploughing was in effect such a failure. Immense sums were spent for comparatively small results. Few technical introductions have ever been accompanied by such high hopes. Even if it is admitted that steam cultivation was most suited to the heavy lands of the country and that it really only suited large farms with large fields, its success was strictly limited. One small firm, Darby's, were estimated to have spent £100,000 in producing thirty machines between 1877 and 1898 and to have lost £8,000 in the process. The sum spent on development by all the firms concerned was huge. Farmers rarely found the reduction in costs as great as anticipated, and in addition the repair, maintenance, and labour costs were often very high. The number of farm horses (in England and Wales) which the experts firmly expected to drop sharply actually rose by over 130,000 during the 'steam age'. The author concludes his very useful chapter on the economics of steam cultivation with an apt quotation by the President of the Royal Agricultural Society in 1867 who described it as "a success which a small amount of ignorance and inattention would convert into a failure." To blame the decline of steam, as Professor Spence does, entirely on the introduction of the internal combustion engine is to fail to take the real failure of steam into account and to ignore the fact that the tractor was of little importance in agriculture in this country even after World War I, by which time the use of steam had declined.

The author's conceptions of nineteenth-century economic history are at times curious. He writes, apparently without qualms, of "nearly two decades of unmitigated depression and misery for the farming industry" following the Napoleonic Wars, and having averred on page 4 that "steam on the farm came into its own amidst the golden prosperity of the 1850's and 1860's" he enters into an almost flat contradiction of the "Golden Age" theory by explaining in a footnote on page 63 that "the hard times of the 1860's, the difficult winters and dry summers" contributed to the downfall of J. J. Mechi. On page 105, when he invokes Lord Ernle's overworked quotation about a hundred farmers plodding along the Elizabethan road, he ignores the fact that he is applying to the mid-sixties a remark made specifically about 1837.

To be further critical, there are a number of irritating and avoidable errors of a minor sort. For example, the Royal Agricultural Society's steam trials in 1862 were held at Farningham not Farington (p. 38). On p. 44 (footnote 36) the date of the introduction of the Ivel agricultural motor is given as 1904 instead of 1902, and on p. 124 (footnote 67) Chichester is referred to as Chinchester.

The book is lavishly and spaciously presented with good illustrations, but the typographer has conceived the irritating notion of placing the pagination half way down the outside margin so that there is a good chance of its being hidden under the thumb of any normal reader. These faults apart, it is a valuable contribution to the still slender technical history of nineteenth-century farming and will provide an important source book for the subject. Not the least of its virtues may be to teach us the advantages of spelling 'plough' more succinctly.

J. W. Y. HIGGS

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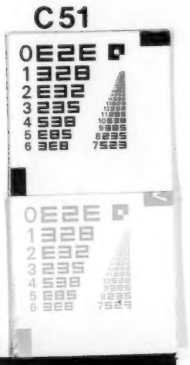
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